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Greetings—62nd Annual Convention—USITA—October 11-14, Chicago, Illinois

OCTOBER 22, 1959

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Public Utilities

FORTNIGHTLY

VOLUME 64 OCTOBER 22, 1959 NUMBER 9

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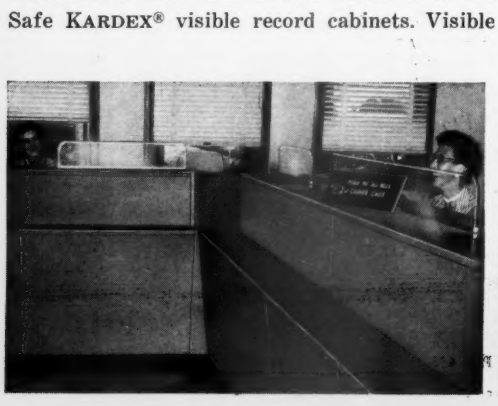

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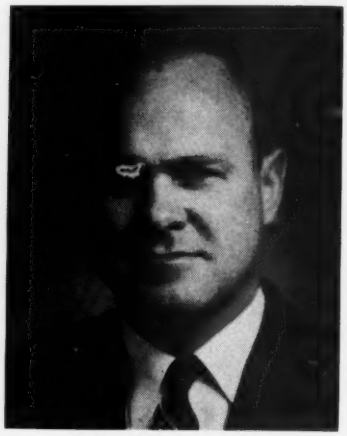
Pages with the Editors

ALL of the feature articles and much of the departmental material in this issue have been planned by the editors so as to be of special interest to the telephone industry. The actual release date of this issue has also been planned so as to coincide with the annual national convention of the United States Independent Telephone Association in Chicago, October 11th to 14th. This will be the 62nd annual meeting of the independent group, and we salute them on their long succession of meetings devoted and dedicated to the welfare of the national independent telephone industry.

As of this writing the first vice president of USITA happens to be the author of our opening article, which tells us something about the relationship between the future of the independent telephone industry and its national association. And if the custom of a number of years is followed, it is reasonable to expect that shortly after this issue is in print FOSTER B. MCHENRY will be the president of the group by virtue of election at Chicago.

MR. MCHENRY is president of the Capital City Telephone Company of Jefferson City, Missouri, which was founded by his own father, the late Houck McHenry, in 1900. Our author was born in Jefferson City and graduated from the high school there. He took an AB degree ('14) from William Jewell College at Liberty, Missouri, and did some postgraduate work at Missouri University in business and public administration. During World War I he served with an infantry division and received a Purple Heart as a result of combat wounds at St. Mihiel. He has been active in the affairs of the American Legion, Masonic Lodge, Kiwanis, Telephone Pioneers, as well as the state and national telephone independent associations.

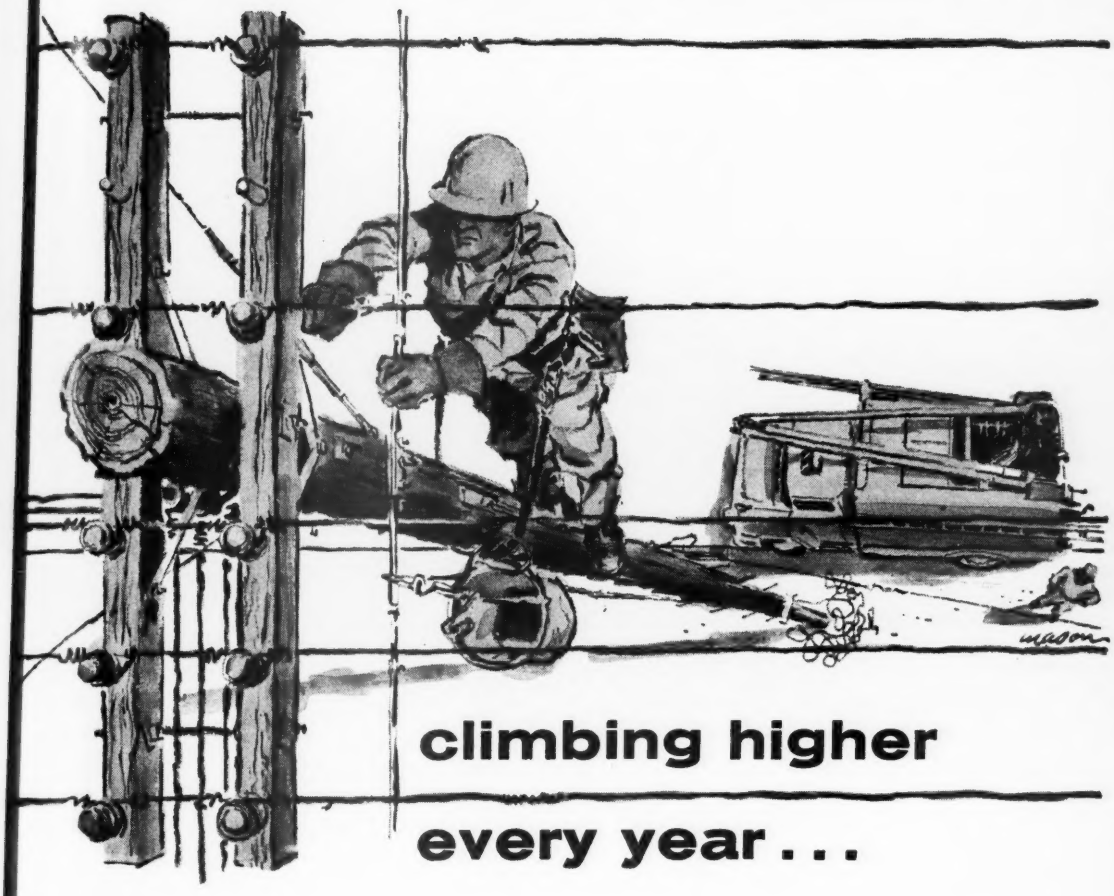
FOSTER B. MCHENRY



WILLIAM R. REISS

* * * *

WILLIAM R. REISS, administrator, new product planning of the American Telephone and Telegraph Company, whose article on developing markets for telephone service begins on page 676, is a native of New Jersey and a graduate of Rutgers University ('43) with a BS in business administration. He joined the Bell system as a student engineer with New Jersey Bell in 1945 following World War II service in Europe as a bomber pilot. After becoming commercial staff supervisor, he was transferred to the American Telephone and Telegraph Company in 1954 as a statistician in its market



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and opinion research section. He reached his present position in July, 1959.

* * * *

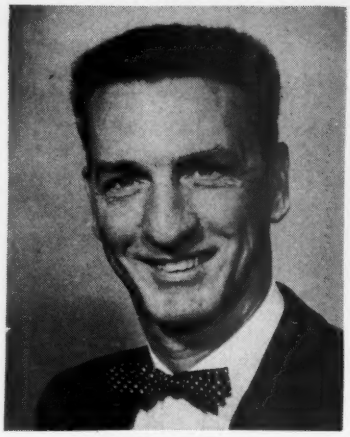
WE know that both independent and Bell telephone people will be interested in the article on the telephone household (beginning on page 681) by EDWARD A. MACNEAL, research director of O. E. McIntyre Incorporated. This article is really a profile of the telephone household, based on census figures and other authoritative sources, and it tells us what kind of fellow the telephone subscriber is, the size of his family, the kind of house he lives in, and even the size of his income. This profile of the telephone household emerges in the form of a breakdown of characteristics, according to classes, in terms of size, income, location, etc.

* * * *

LEROY J. RYAN, whose article on the work being done by voluntary medical engineers, mainly from the telephone industry (see page 686), is president of SAVE, which stands for Service Activities of Volunteer Engineers. But that is simply a wonderful avocation. MR. RYAN'S career job is in the engineering department of the Illinois Bell Telephone Company in Chicago. He is a native Chicagoan, who started with Illinois Bell as an installer in 1930 and received his BS degree from Northwestern University, College of Engineering, in 1943. He has also done graduate work in electronics at DePaul University and Bell Laboratories. He is a member of the American Institute of Electrical Engineers, and for a number of years was with the Western Electric Company, developing the famous crossbar switching equipment.

* * * *

TWO months ago, in Geneva, Switzerland, the International Telecommunications Union gathered for a conference, the agenda of which included the regulation of communications in the light of recent developments in the conquest of space. FRANCIS X. WELCH, editor of PUBLIC UTILITIES FORTNIGHTLY, has gathered reports about this meeting, still going on at the Swiss city, and endeavors to tell us



LEROY J. RYAN

what this means in terms of everyday telephone and telegraph utility business. Space communications already have become an important and serious problem for the communication industries, as evidenced by the utilization of satellites and the moon for radio relay and the work being done in the tracking of missiles to outer space.

* * * *

THE motel in America is little more than twenty-five years old, from the standpoint of popular acceptance and general use. But it is a peculiarly American institution. In no other country has the union between the inn-keeping tradition and private automobile travel via the highways brought about a comparable arrangement. It differs from the downtown modern hotel, and of course provides a more extensive service to the automobile tourist than the low-cost pensions and hostels frequented by students and hikers and cyclists in Europe. Naturally, such a characteristic development has brought forth in its wake special service problems, including the problem of telephone service. Beginning on page 697 JOHN MAPPELBECK, freelance writer of Washington, D. C., has given us a report on this particular angle of recent origin.

THE next number of this magazine will be out November 5th.

The Editors

GROWING WITH NEBRASKA

This company is the largest Independent telephone company in Nebraska, operating about one-fourth of the telephones in the state. It serves 126 exchanges (105 dial, 21 manual) in the southeast 22 counties of the state, an area of rich farmlands and expanding irrigation and industry.

An atomic energy power plant being built near Lincoln will attract a movement of industry and population to this area. Several proposed missile bases and the Lincoln Air Force Base near here will require vast amounts of communication facilities.

Here is the record of progress since 1956: 18 exchanges converted to dial operation—2 new dial exchanges established—six major buildings constructed—new nine story general office and equipment building at Lincoln nearing completion—direct distance dialing for 25 exchanges—microwave radio message service between 24 exchanges—mechanized billing through data processing equipment. The company has direct connection with the national toll dialing and transcontinental radio relay systems.

Target date is 1964 for 100% dial operation with direct distance dialing. This involves construction of 10 major buildings and expansion of microwave, distribution, central office and other facilities.

Earnings per share increased from $1.90 to $2.53 the first seven months this year. This reflects in part a rate increase of last February and results of growth, new methods of efficiency and active merchandising. Now in its 55th year, L T & T has doubled its investment in the last eight years to keep ahead of service demands. A $50 million company, it is equipped to provide modern communication service to meet any customer need.

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(November 5, 1959, issue)

★

THE FORTHCOMING QUODDY REPORT

During the early days of the first New Deal, the idea of developing tidal power production at Passamaquoddy Bay was given serious consideration as a public works project to relieve unemployment. But after several million dollars worth of rock had been dumped into the Bay of Fundy it was decided that the cost of such power, as compared with the demand and probable market at the power site, would not make the government's investment practical. Now, more than two decades later, with increasing power demands and decreasing hydroelectric sites elsewhere, Quoddy is once more beginning to receive serious consideration. Dr. Lincoln Smith of New York University tells us about the report of the International Joint Commission which is being awaited by the citizens of the state of Maine and the Province of New Brunswick, as well as by the taxpayers at large.

AREA DEVELOPMENT BY UTILITIES — NEW YORK, MISSISSIPPI, MISSOURI, TEXAS, AND WISCONSIN

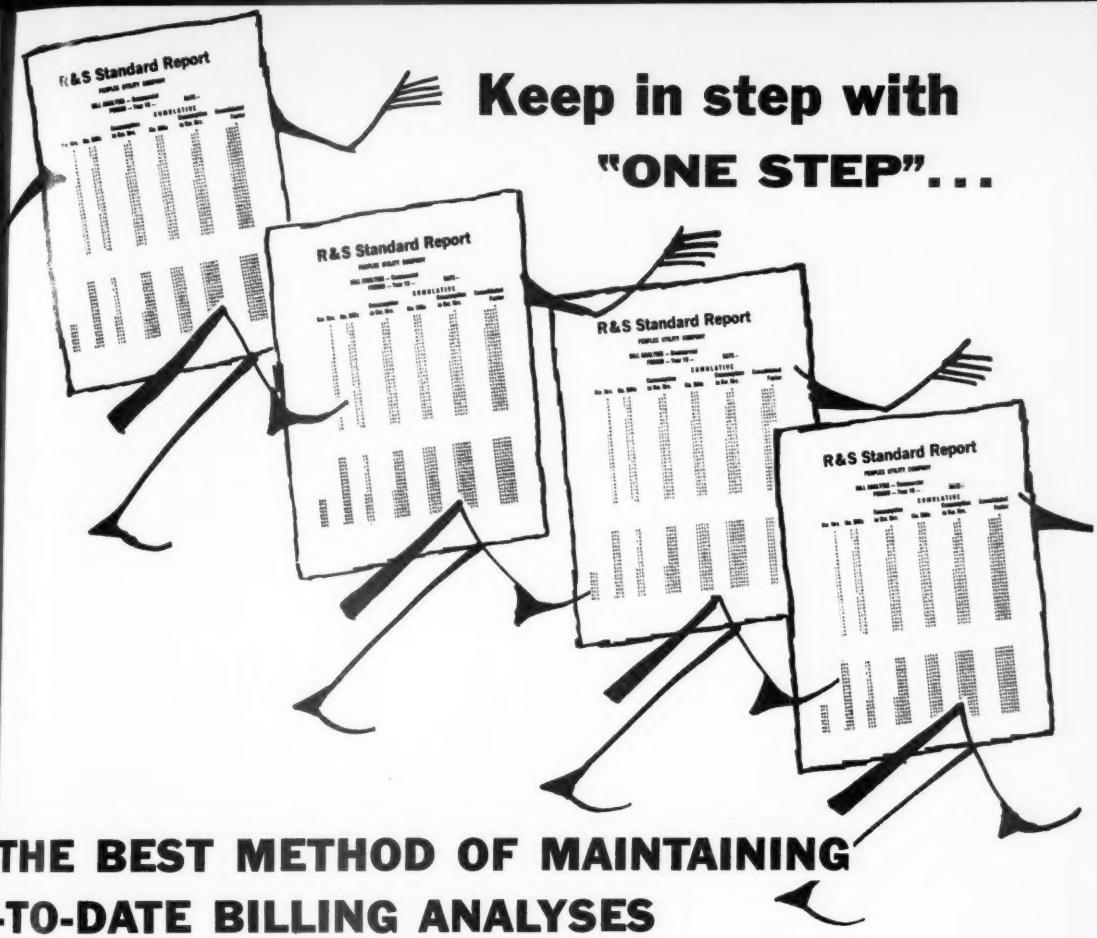
In this article by C. E. Wright, former industrial magazine editor and free-lance writer of Jacksonville, Florida, actual programs for community betterment and area development being followed by public utility companies in New York, Mississippi, Missouri, Texas, and Wisconsin have been analyzed and reported. This is the second in a series of articles Mr. Wright is doing on the subject of area development by public utility companies. Particular utility company programs reviewed include Niagara Mohawk Power Corporation, Gulf States Utilities Company of Beaumont, Texas, Mississippi Power & Light Company, Union Electric Company of St. Louis, and Wisconsin Power & Light Company.

THE OUTLOOK FOR BONNEVILLE POWER LEGISLATION

In the September 24th issue of PUBLIC UTILITIES FORTNIGHTLY there was published an article by the editor of this magazine, dealing with legislation now pending in Congress designed to amend the present Bonneville Power Administration Act. This would utilize a federal corporation with authority to finance its own operations, similar to the Tennessee Valley Authority, and the discussion in that article turned mainly on the general progress of public ownership in the field of power via the federal corporation. In this article by Edward R. Lucas, Washington state newspaperman, local reaction to the so-called Neuberger Bill is appraised, and the author takes us a step farther into the realm of speculation as to what the chances of enactment might be from the standpoint of popular support in the region affected.

★

Also . . . ***Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.***



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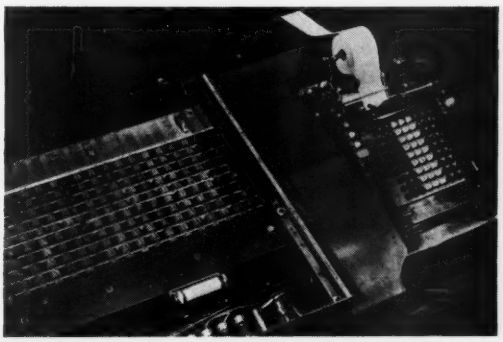

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Columnist.

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GEORGE W. DAVIS
Chairman of the board, Pacific Stock Exchange.

"There is no use talking to American youth about investing in this country unless we first talk to their parents about keeping the dollar sound. [There can be no creation of new jobs unless more people invest savings], the spark plug of the capitalistic system. Only one-third of the $175 billion put into U. S. industrial plants and equipment in the last five years was plowed back from business profits. The rest came from savings in various forms."

FREDERICK R. KAPPEL
President, American Telephone and Telegraph Company.

"Our function in the Bell system is not to produce goods, but to render public service. Our every effort is to do this as efficiently as we can, and to furnish service that will be just as dependable, pleasing, and satisfying to the public as we can make it . . . no less than any other private enterprise, we need to generate service-minded, sales-minded, and profit-minded attitudes in employees. We need to infuse among all Bell system people a keen desire and determination to give the very best in service; and to help bring about this kind of attitude, we need to do the most we can to broaden their understanding of all the factors that will aid the organization to reach its service goals."

Central Telephone Company
and Affiliates

Central Telephone Company

and Affiliates

La Crosse Telephone Corporation
Lexington Telephone Company
Middle States Telephone Company of Illinois
Virginia Telephone & Telegraph Company
Southeastern Telephone Company

One of the larger independent telephone systems operating 159 exchanges, serving 287,593 company-owned stations on June 30, 1959, of which over 87% are dial-automatic.

PUBLIC SERVICE CENTRAL TELEPHONE SYSTEM

Telephone Exchanges of:

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- ◉ La Crosse Telephone Corporation
- ■ Lexington Telephone Company
- ◉ Middle States Telephone Company of Illinois
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Gas Tempering: **Report No. 2**

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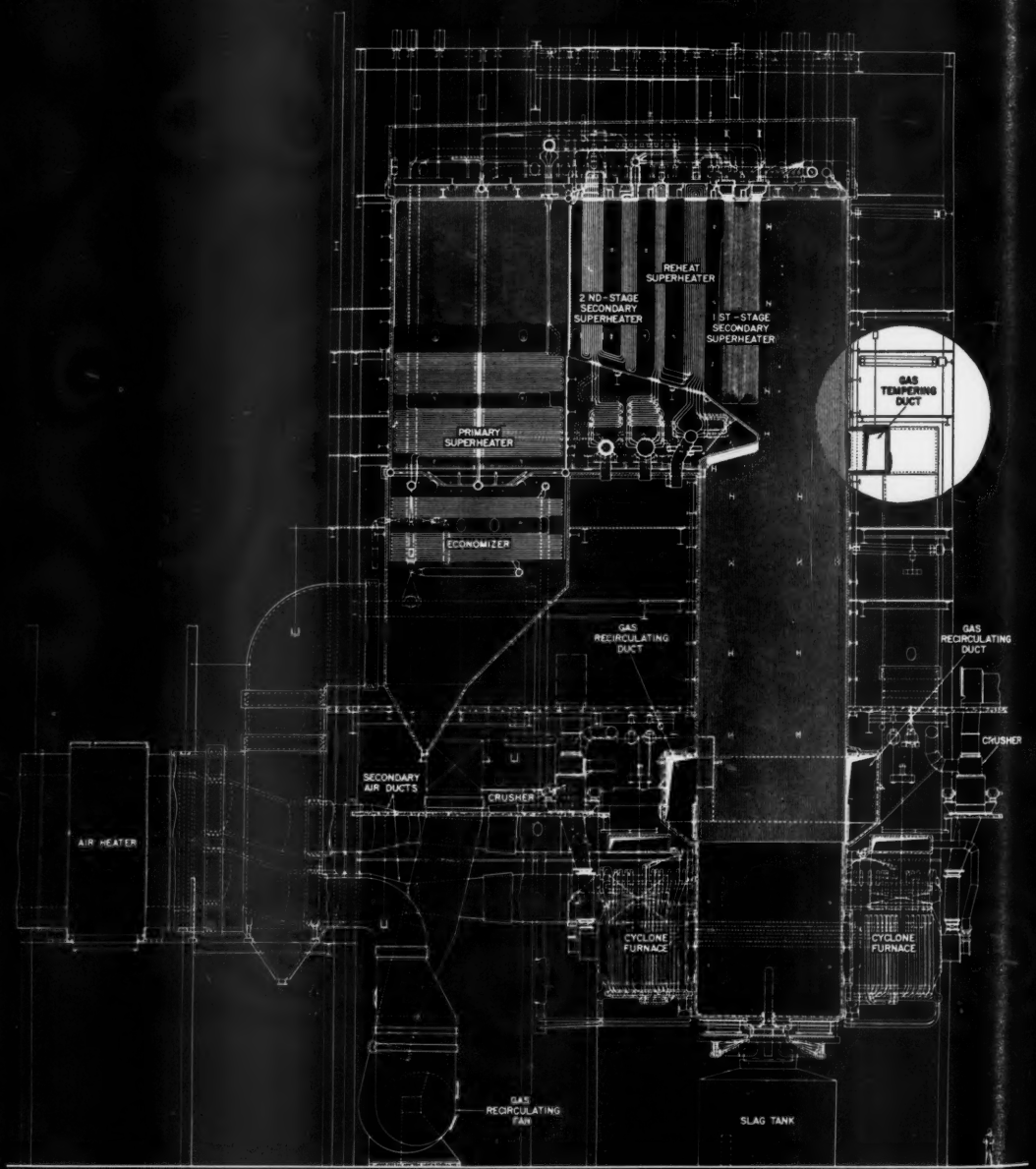

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Major Advantages of B&W Gas Tempering

. . . It cuts overall plant costs because the smaller size unit requires a smaller building per kw, a lighter foundation, less structural steel and shorter steam leads.

. . . It enables you to utilize the most economical available fuels. It permits the burning of a variety of coals without slagging, minimizes external corrosion of superheater tubes, and assures safe metal temperature, thus prolonging tube life, regardless of the fuel fired.

. . . It provides safe superheater tube temperature by positive gas temperature control; it protects superheater during startup and under all operating conditions.

. . . It makes it safer to design for economies offered by operation at steam temperatures of 1050 F and above.

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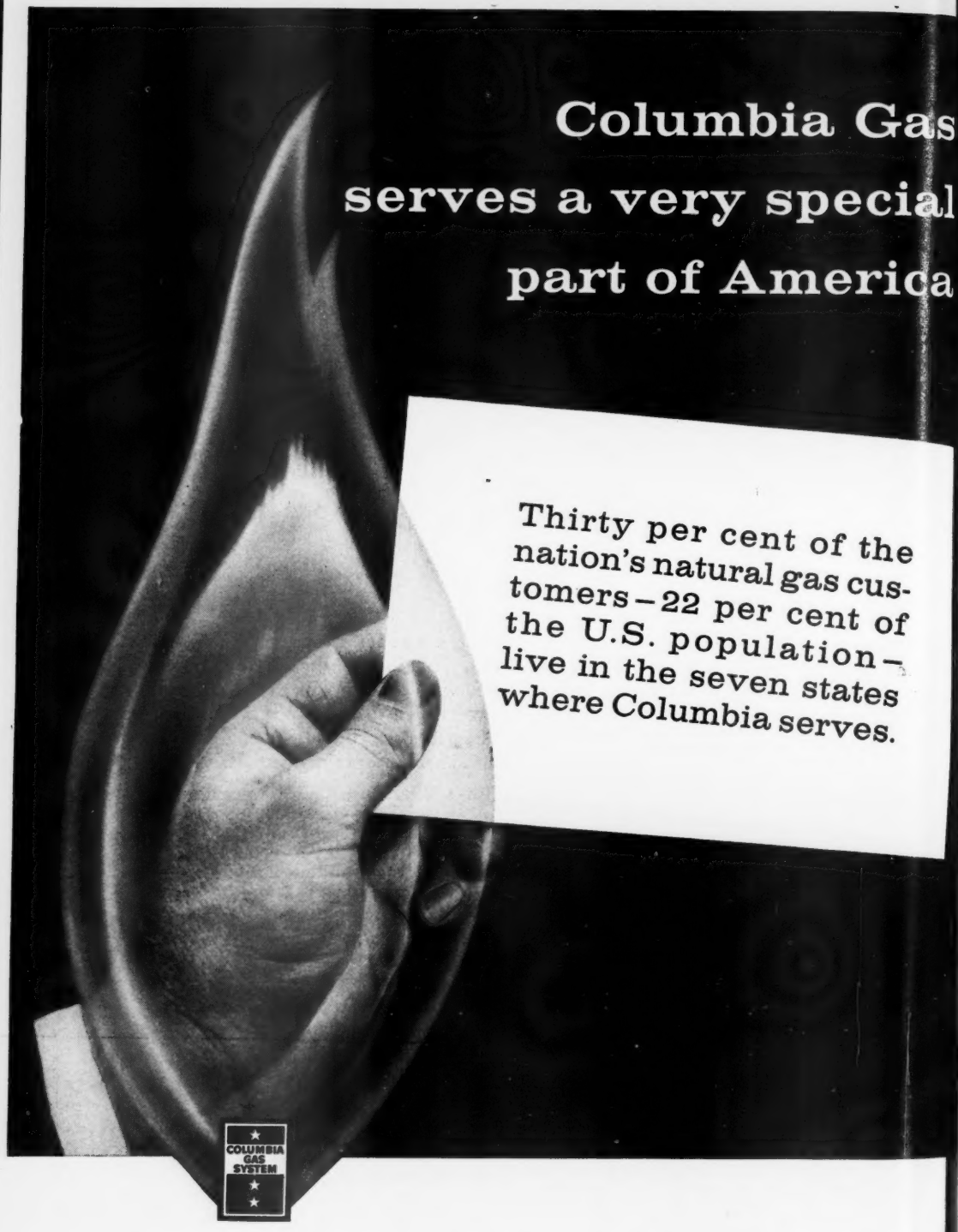
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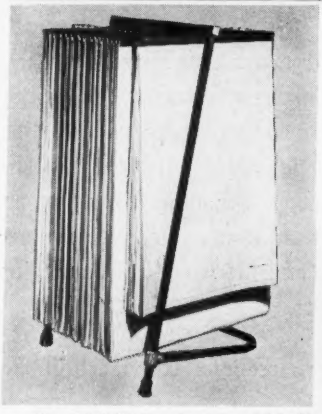

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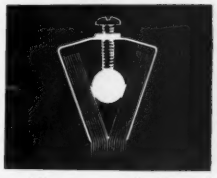

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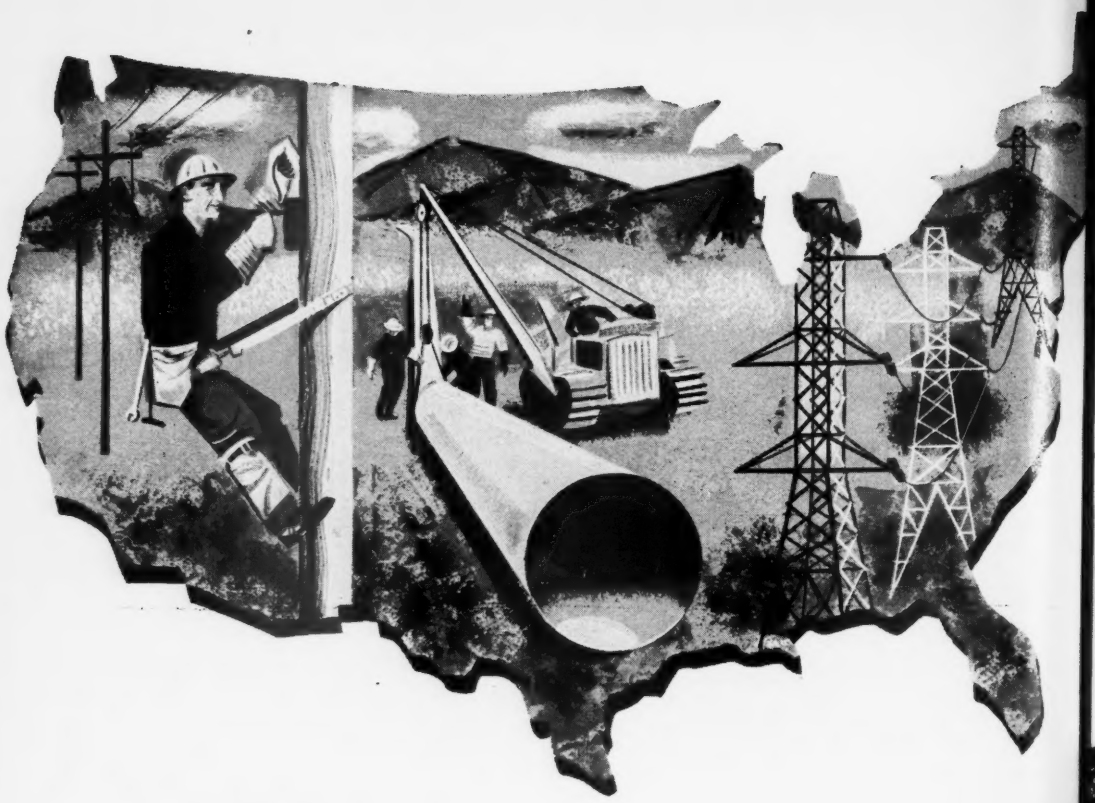

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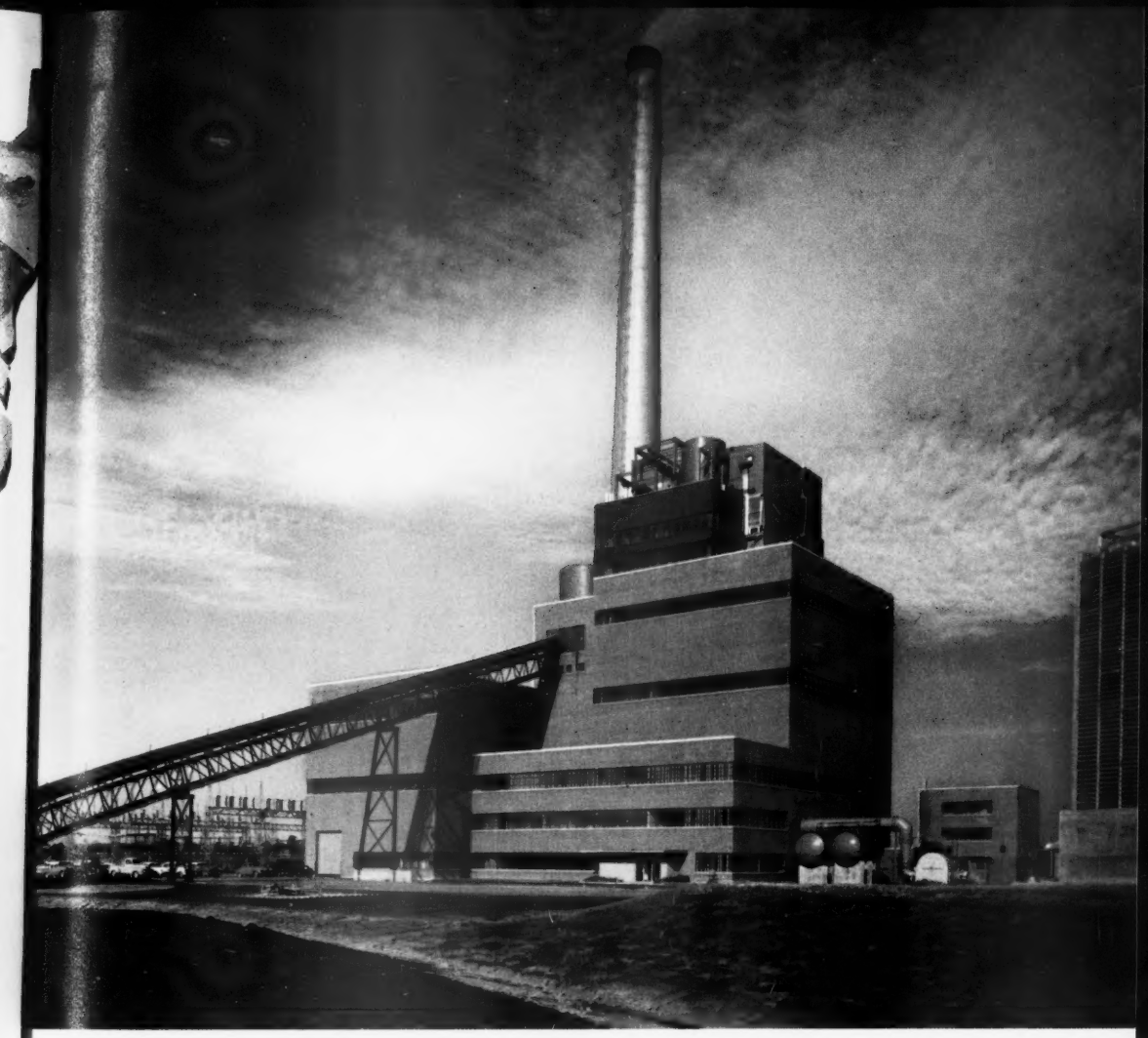

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The hundreds of thousands of Americans who earn their living at work with the telephone and telegraph industries are proud of the scope and skills of their service in local and worldwide communication. They're proud, too, of the vast and varied help their industry is giving to our national security.

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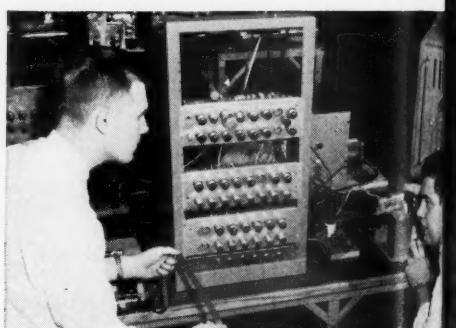

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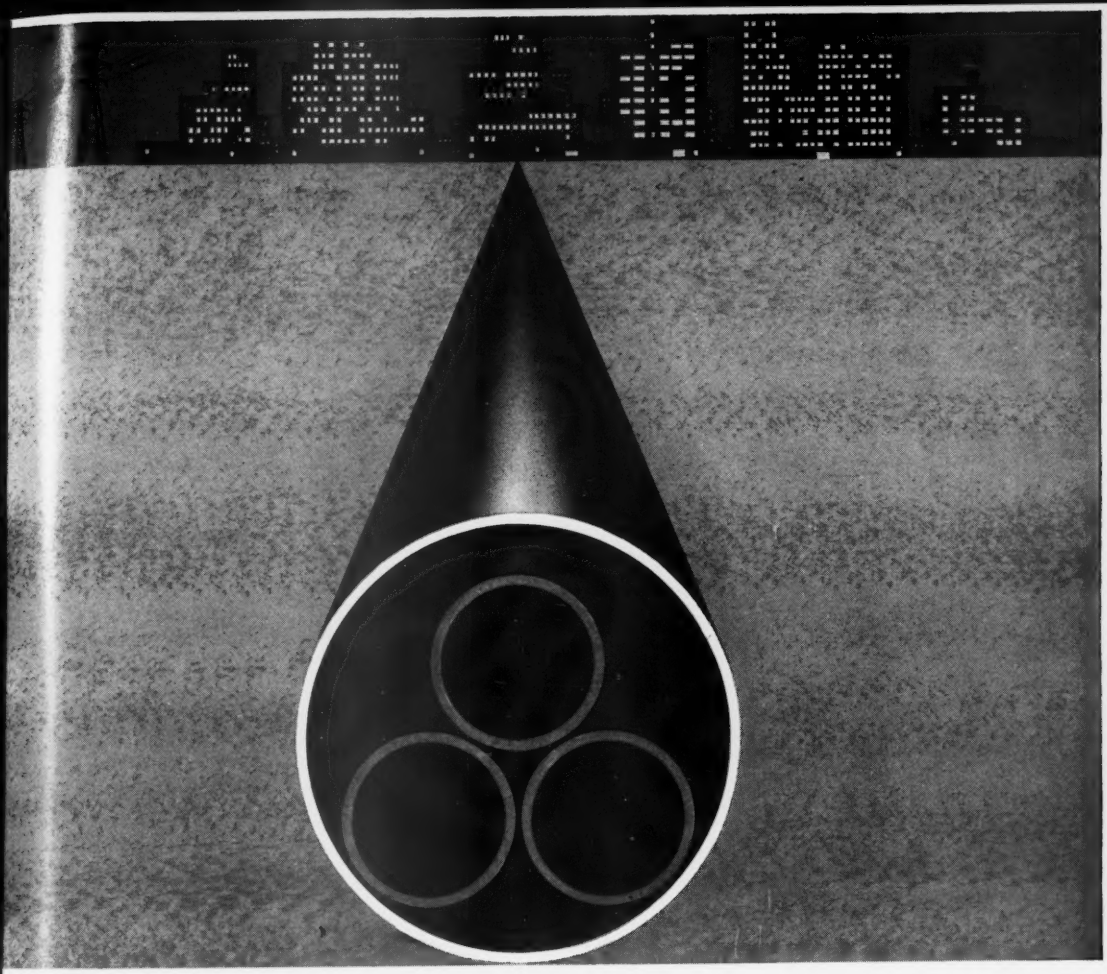

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Provides improved protection under these conditions:

1. On pipe type cables or "oil-o-static lines" subject to internal electrical heat. (Up to 180° F. down to –10° F.)
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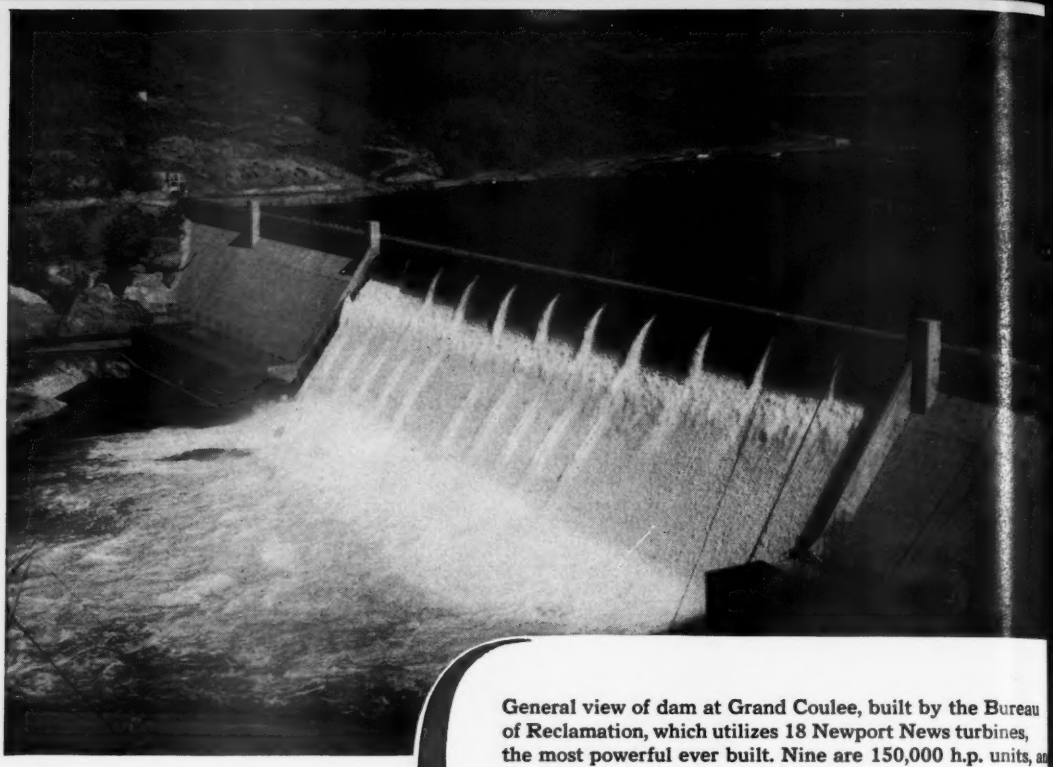

General view of dam at Grand Coulee, built by the Bureau of Reclamation, which utilizes 18 Newport News turbines, the most powerful ever built. Nine are 150,000 h.p. units, and the other nine are rated at 165,000 h.p. each.

Specialists . . . in building Water Power Equipme

Turbines designed and built for the world's largest development at Grand Coulee... and for other hydroelectric installations in America and various parts of the world... bespeak the skill and facilities offered by Newport News.

This trained organization has filled hydroelectric turbine contracts with an aggregate rated output of 7,000,000 horsepower.

Other equipment designed and built by Newport News includes penstocks, pressure regulators, valves, pumps, gates and rack rakes. Upon request, a copy of our illustrated booklet entitled "WATER POWER EQUIPMENT" will be sent to you.

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Rock Creek	California
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FROM: **GENERAL TELEPHONE & ELECTRONICS**

RE: **TOMORROW'S COMMUNICATIONS NEEDS**

This country's growth potential is unlimited.

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And as the nation grows, its communications needs expand with it. The development of new and faster techniques of voice and data transmission is necessary. Also, improvement in equipment design and usefulness. And more and better services.

In order to keep pace with such a demanding future, a company must depend on advanced research.

That's why we have a large and highly trained staff of scientists and engineers—working in laboratories from coast to coast—giving us the capacity to deepen the knowledge, develop the accomplishments needed to help realize industry's growth potential. Not to mention a variety of capabilities in the area of national defense as well.

We feel positive that this thinking ahead, planning ahead, equip us to serve a growing America—today and tomorrow. General Telephone & Electronics Corporation.

GENERAL TELEPHONE & ELECTRONICS

GENERAL SYSTEM

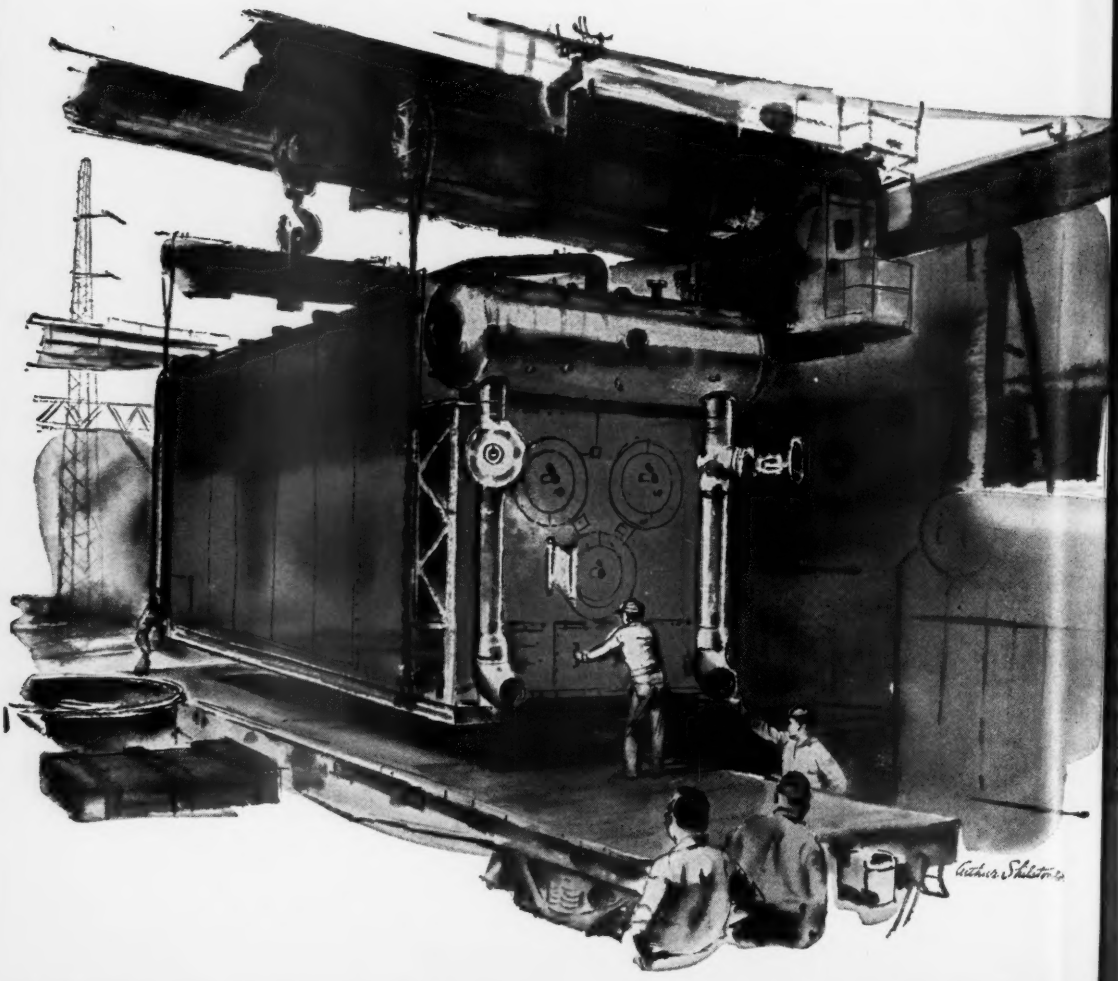
730 Third Avenue, New York 17, N. Y.

RECORD-BREAKING HIGH

. . . wrapped in a Packag

The plant on the facing page is the Eddystone Station of the Philadelphia Electric Company. It contains a C-E Sulzer Monotube Steam Generator, a small portion of which is shown in the upper left corner of the drawing. This boiler, soon to be placed in commercial service, will produce steam at the highest pressure and temperature ever used in power plant practice — 5000 lb per sq in and 1200 F.

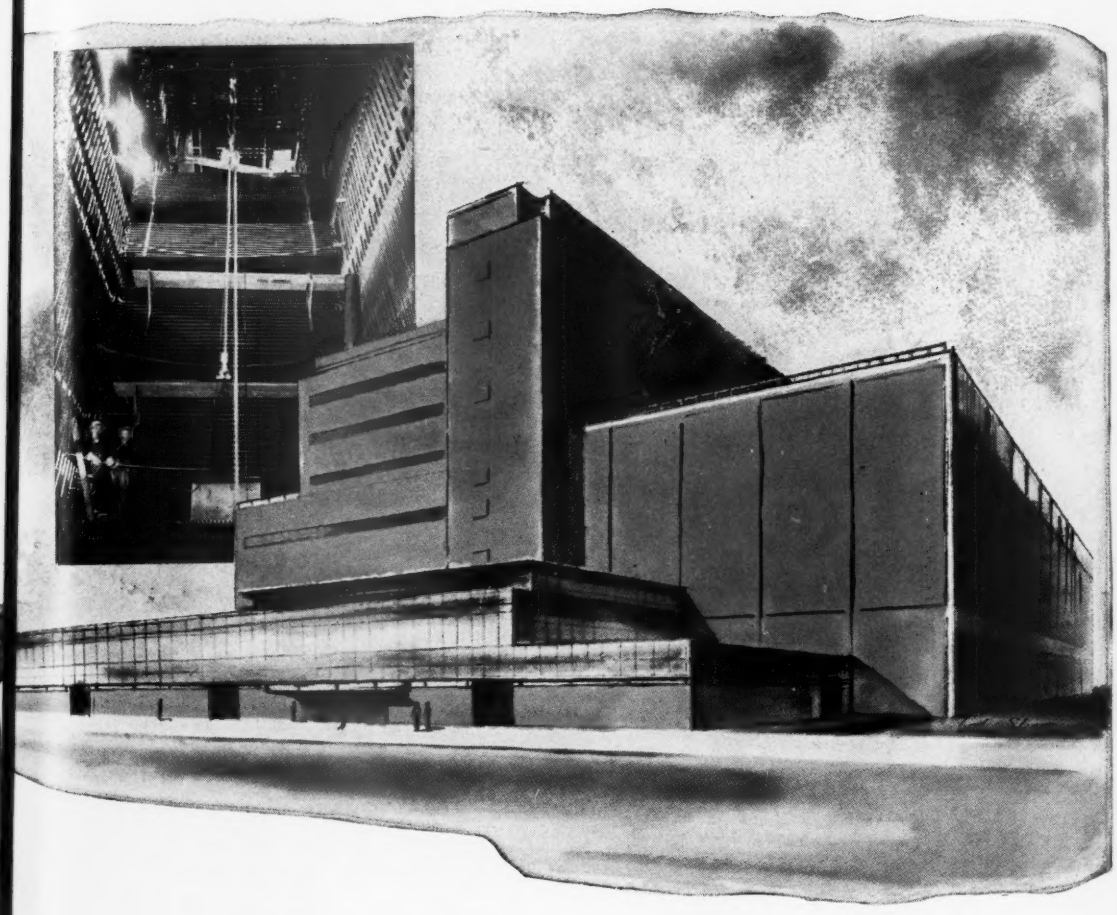
Shown below is the world's highest-pressure "package" boiler — a C-E Controlled Circulation Unit — Type PCC. It is designed to produce steam at a pressure of 1800 psi and 1050 F. Now installed at the General Electric Company plant at Fitchburg, Massachusetts, it provides steam for special testing purposes.



ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; NUCLEAR REACTO

GRESSURE BOILERS by C-E

kag. or filling a Plant



e facts on the opposite page are of significance to u. They are part of the long list of C-E "firsts"— list which includes the world's first boiler designed produce as much as 3,850,000 lb steam per hour and the world's largest package boiler, which pro- ces 120,000 lb steam per hour. They give further iden e that—even in the biggest sizes and in the ghest pressure ranges—C-E offers the most advanced signs for all steam requirements and with all fuels. dat 38 C-E units have been purchased to pro- de 2400-pound pressure steam—or above—at the rottle of turbine-generators that have an aggregate capacity of about 8-million kilowatts. Fourteen of these units are already in service—one for a period of over three years.

When you are in the market for high-pressure boilers, it will pay you to contact the organization which offers you the broadest experience in the field —Combustion Engineering. In addition to these high pressure units, C-E also offers boilers in all types and sizes with capacities ranging from 4000 pounds of steam per hour, up to the largest in the world. All are designed to meet your needs reliably, efficiently and economically.

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You can choose a powerful V-8 or thrifty Six, 3- or 4-speed transmission—even push-button automatic LoadFlite. See your Dodge dealer about this Tradesman, or any Dodge truck up to 49,000-lb. G.V.W. Power Giants. Find out why . . .

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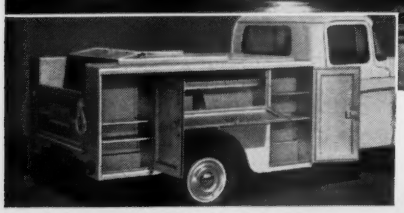
Trucks



A king-sized tool chest on wheels . . . that's the Dodge Trade-man's Tools and supplies stow neatly, where you can reach them quickly. A for everything. All compartments lock. Available sliding roof pr pick-up load space, between body sides. Choice of two body styles.

UTILITIES
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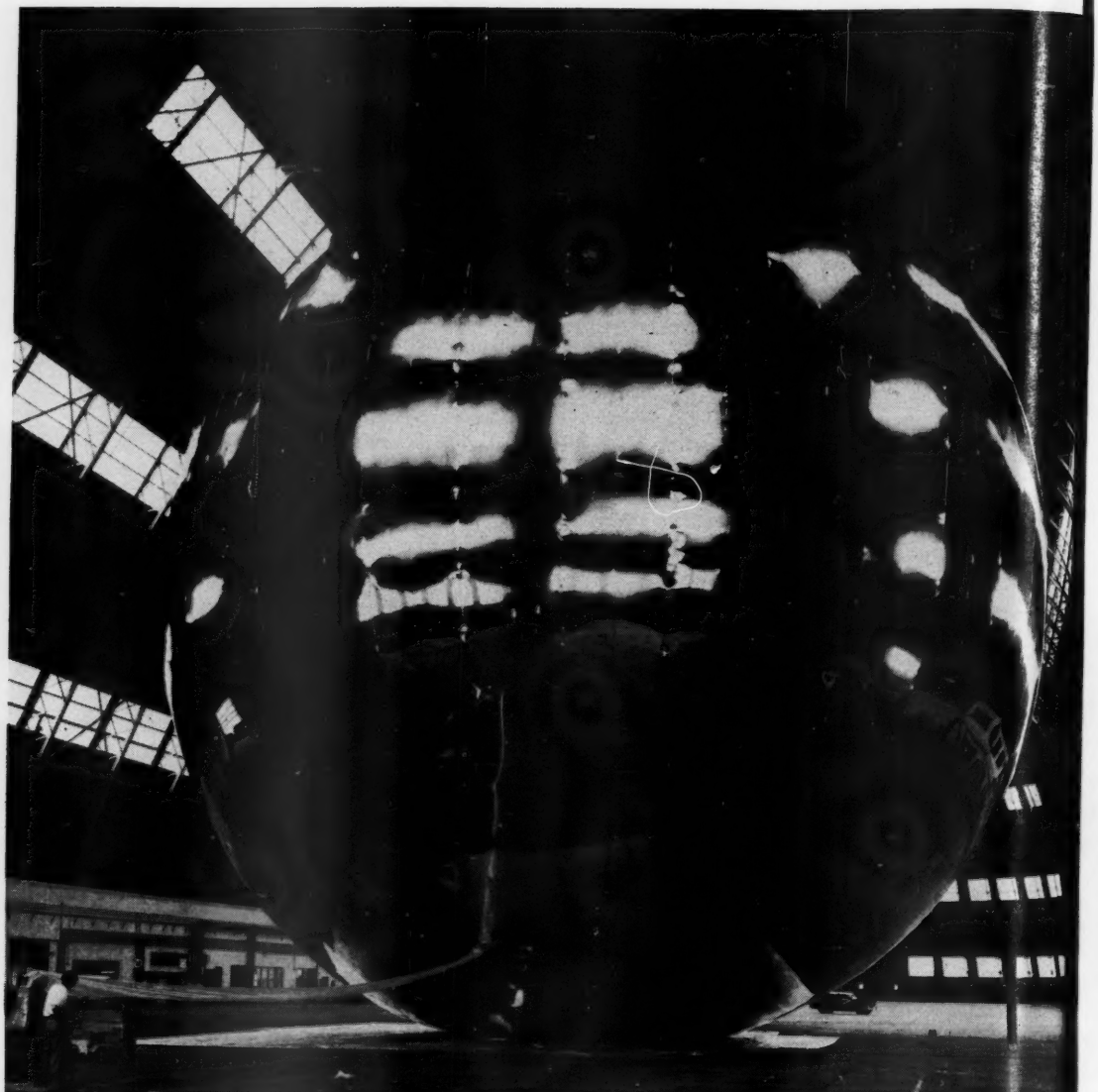
OCTOBER - NOVEMBER

Thursday—22 *American Water Works Association, New Jersey Section, begins annual meeting, Atlantic City, N. J.*	**Friday—23** *Natural Gasoline Association of America begins southern regional meeting, Tyler, Tex.*	**Saturday—24** *Alabama Telephone Association will hold annual convention, Birmingham, Ala. Nov. 9, 10.* ***Advance notice.***	**Sunday—25** *South Carolina Telephone Association begins annual convention, Clemson, S. C.*
Monday—26 *Independent Natural Gas Association of America begins annual meeting, Phoenix, Ariz.*	**Tuesday—27** *Georgia Telephone Association will hold annual convention, Atlanta, Ga. Nov. 11, 12.* ***Advance notice.***	**Wednesday—28** *American Water Works Association, Ohio Section, begins meeting, Dayton, Ohio.*	**Thursday—29** *Virginia Telephone Association begins annual convention, Roanoke, Va.*
Friday—30 *American Society of Heating, Refrigerating, and Air-Conditioning Engineers begins semiannual meeting, Atlantic City, N. J.*	**Saturday—31** *Electric Council of New England will hold annual conference, Boston, Mass. Nov. 12, 13.* ***Advance notice.***	**NOVEMBER** **Sunday—1** *Oklahoma Telephone Association will hold annual convention, Oklahoma City, Okla. Nov. 18, 19.* ***Advance notice.***	**Monday—2** *Exposition of the Air Conditioning and Refrigeration Industry begins, Atlantic City, N. J.*
Tuesday—3 *American Gas Association, Managing Committee, will hold meeting, Phoenix, Ariz. Nov. 19, 20,* ***Advance notice.***	**Wednesday—4** *New Jersey Utilities Association begins annual meeting, Absecon, N. J.*	**Thursday—5** *Pacific Coast Electrical Association begins biennial conference, Honolulu, Hawaii.*	**Friday—6** *National Hotel Exposition ends, New York, N. Y.*



Courtesy, National Aeronautics and Space Administration

Satellite Microwave Station

Huge plastic spheres like this, 100 feet in diameter, are used in satellite transmission experiments. When in orbit their aluminized surfaces reflect microwaves. Thus, they serve as passive transmitters of signals. Such spheres have been studied with reference to a transatlantic broad band transmission system.

Public Utilities
FORTNIGHTLY

VOLUME 64 OCTOBER 22, 1959 NUMBER 9

USITA and the Independents' Future

The future looms auspiciously for the independent telephone companies. Led by a strong, aggressive trade association and spurred to new heights of achievement by challenging technical advances and expanding markets, the independents seem destined to attain an even brighter position in the telephone world's firmament.

By FOSTER B. McHENRY*
First vice president, United States Independent Telephone Association

THE United States Independent Telephone Association today stands upon the most important threshold of its history. Always a force in the dynamic, potent independent telephone industry, it must be particularly prepared at this time to meet new and unique challenges.

This is true for several reasons: The first is that the independent industry is expanding while it is contracting. The number of companies comprising it is shrinking, while at the same time those companies are expanding plant facilities at a near-maximum rate.

Mergers and consolidations for various reasons—contiguous territory problems, financial inadequacies, smallness of economic entity, etc.—are eliminating many, many smaller companies. As a result, the remaining companies are generally stronger, larger, and perhaps more aggressive in their desire to provide better and more extensive service. The USITA must be the rock to which the ever-changing industry can anchor.

THE second reason is perhaps the cause of many of the reorganizations mentioned in the first, but it must be considered separately because of its overall

*Also president, Capital City Telephone Company, Jefferson City, Missouri. For additional personal note, see "Pages with the Editors."

importance. Many areas, adjacent to large metropolitan centers, have expanded greatly since the war. In many cases, this expansion has been in areas served by independent telephone companies. This has made giants out of companies that were relatively tiny only a few years ago. The indications are that this will continue, at perhaps an even greater rate—that the greatest expansion in the years to come will be in independent areas, which cover well over half the geographical area of the United States. The national association must grow in strength commensurate with the overall strength of its parts—the independent operating companies and their suppliers.

The third reason is that, while great strides have been made in the improvement of communications in recent years, far greater and more rapid progress will be made in the immediate future. The very nature of communications will change. From a relatively basic system of wire lines supplemented by applications of radio transmission, it will vary immensely in its applications, with perhaps the greatest emphasis on radio. Briefly stated, our communications system will become increasingly complex. The staff of the USITA must grow with this technological advancement.

Amazing Developments to Come

EVEN a brief glance at some recently discussed developments is enough to stagger the imagination. There are many million automobiles and commercial vehicles in the United States. At *some* time in the future, virtually all of these will be equipped with communications facilities equal in convenience to the best residential and business fixed facilities. What a fantastic market!

At some time in the foreseeable future, there must also be a "telephone," if you will, that will do what any other telephone will do, except that it will be carried on the person, at virtually no inconvenience. It will be developed because the market presented by the total number of adult Americans, say, in 1975, simply cannot be ignored from a business standpoint. Another development will be that of visual facilities conjunctive with our present wire communications — "phonovision." Can anyone, in the face of the fantastic scientific progress of the last decade, deny that such will be a reality?

The profit possibilities of these new developments will justify literally billions of dollars for research over the years to come, and the results of that research will be practical workability, just as has happened countless times in the past—and in the face of even greater difficulties.

THERE are other developments, also, that will demand a strong independent association. The widespread application of direct distance dialing techniques has already left a rather large unexplored gap in Bell-Independent toll settlement negotiations. The possibility of flat rate long-distance service in the future will raise problems gigantic in comparison. To face that future as an independent company, regardless of size, without the assistance of a strong national association, would be out of the question. The words of AT&T President Frederick R. Kappel that "we in the telephone industry must get together, think together, and plan and work together" imply an increasingly important rôle for USITA in this regard.

Legislation and Education

IT must be recognized that the outcome of battles on the legislative front have been of utmost importance to many major industries in the United States, the independent telephone industry included. It will be even more important in the future. As our economy grows more complex and interrelated as between industries, our legislative vigilance must be at the same time more intensive and extensive. It has been clearly demonstrated, particularly in the last two decades, that quasi-legislative action by federal commissions and agencies of one kind or another, is becoming more important to industry, and that especially includes utilities. The technique of making oneself heard in Washington's legislative corridors has most assuredly been refined over recent years and will be even more sophisticated in years to come. The idea of companies undertaking this educational task on an individual basis is dismal to contemplate.

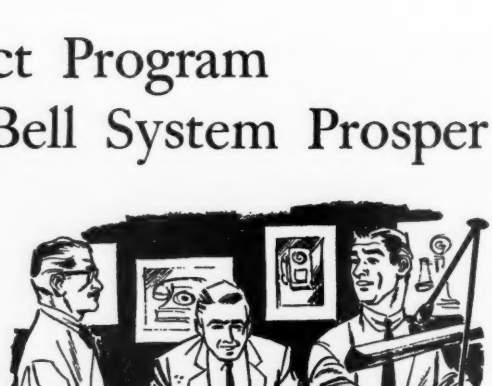
Time was when a pretty good practical, on-the-job education was enough to see a telephone executive in a small company through. That day is gone forever. Beyond that, the nature of the business today requires the highest degree not only of general executive and technical education, but specialization to an extent never before required. It is not enough that a man be an engineer, he must be a *telephone* engineer, in order to maximize his value to the industry. It is not enough that a man be competent as a general executive; he must qualify as a telephone executive.

Through the efforts of USITA it has been possible for telephone executives to avail themselves of special educational facilities that would not be available to individual companies, such as the annual executive training program at the University of Kansas. This function of the national association will expand to become a major service, not merely helpful, but absolutely necessary to the independent industry. Further, the USITA can be of invaluable assistance as a source of guidance in the training of middle and lower management —most important to a rapidly growing industry.

THE future of the USITA is indeed challenging in the light of these developments. New opportunities for help to its members are constantly rising. The national association is inextricably linked to the growing potential of independent operating companies—and the prospect for all is growth, strength, and prosperity.

The national trade organization of the independent segment of the telephone industry has been a constructive, vital force with many monuments to its effectiveness and good work. There is every reason to think it will continue to provide the leadership needed by a business having the vibrant qualities of the independent telephone companies of the nation.

New Product Program Is Helping Bell System Prosper



By WILLIAM R. REISS*

The Bell people have developed a system for pretesting new products on a limited scale before attempting to sell them on a mass basis. Successful ones are then programed for production and promotion. This marketing activity has been done so well that AT&T has grown, made more money, and kept up its ceaseless research for still better products.

ONE of the most significant developments in the Bell system's current marketing activities is the attention being given to new products. This has been largely prompted by the public's demand for more and better telephone products of every description and its willingness to pay for them. Gone are the days of one black telephone in the front hall. People now want telephones throughout the home or office which are more attractive, smaller, colorful, easier to use, and offering new features. Above all they want choice. The fact is that people's wants are ever changing, and the Bell system's new product planning program is trying to anticipate those wants.

The attention currently focused on new products also is directed toward opportunities for increased earnings and greater usage of the basic commodity—a telephone call. Attractive and useful products have been found to stimulate calling. And it follows that the more people call, the more telephones they want. The call may be communication between people or machines. The people or machines may be located in the same building or at opposite ends of the country or the world. The call may consist of voice communication, written material, or any form of coded information. The ultimate success of the

*Administrator, new product planning, American Telephone and Telegraph Company. For additional personal note, see "Pages with the Editors."

telephone system lies in providing the most useful, attractive, and economic means of carrying on this communication and to continually increase the volume, whether local or long-distance, as the customers' needs expand. The Bell system's new product activity is being carried on with this concept always foremost in mind.

What Product Planning Is

WHAT is product planning and how does it operate in the Bell system? Briefly the program consists of collecting ideas, producing test models, customer testing, and finally market programing. These marketing methods and techniques have not grown up over night. Much trial and error form the basis of what is now rapidly becoming an established procedure.

The marketing cycle for new products begins with obtaining ideas. The idea may be in the form of an improved version of an existing product or an entirely new product. Ideas originate from many sources; for example, from customers, salesmen, engineers, higher management, marketing people, and market research, just to name the more important. Although many ideas do not result in new products, the successes realized by the more promising ones more than justify the effort involved. Ideas will be generated within a business in plentiful numbers as long as a receptive climate is maintained.

In weighing and analyzing ideas, Bell system marketing people give consideration to many questions, including: Will it really enhance telephone service? Who is likely to want the product? What is likely to be the charge? How many probably can be sold? and Is it the kind of product the Bell system should offer? Sometimes during the analysis stage answers to questions relative to the potential market for a product idea are obtained through market research. For example, new telephone designs sometimes are appearance-tested with customers through use of dummy models.

Ascertaining the Market

TRADITIONALLY, ideas for new products have been considered in terms of two broad markets—residence and business. However, with the growing complexity of the economy and of communications requirements, this is no longer true. Markets have been segmented and then segmented again. The objective is to anticipate the needs of each segment of the market—for example, department stores, hotels-motels, airlines, refineries, farms, homes, apartments, and so on. The uses of communications by each group are growing more divergent and specialized as time goes on. They must be explored carefully with the help of the customer. Before it is possible to discover all the communication services and products which an industry needs, it becomes necessary to almost live with the industry in order to learn how it operates, how it uses communications, etc.

A new product idea which appears to meet the basic market requirements must undergo a technical evaluation. Once completed the next step is to obtain customer evaluation. This, of course, involves the design and manufacture of a fairly large number of working models. In the Bell system this is accomplished by the Western Electric Company's Model Shop. This in a sense is a miniature factory devoted to the exclusive task of designing and building test models. The Model Shop can be considered the keystone of the new

product program. For with the Model Shop's specialization, it is possible to turn out hundreds of units of new product models in a very short time. Formerly work of this nature was sandwiched in regular assembly operations and took considerably longer.

Consumer Testing

CUSTOMER testing as conducted by the Bell system involves two basic types of tests—product trials and market trials.

Product trials are aimed at determining whether the product operates as expected, how customers react to its style, design, and features, and what modifications, if any, should be made in it. Tests of this kind are usually limited in scope. They normally are made in one or two cities; no charge is made to the customer and they are of relatively short duration. This type of test helps determine those products which are useful and appealing to customers as well as those which are not.

TYPICAL OF product tests is one currently under way involving a push-button telephone—a telephone which contains ten push buttons in lieu of a dial. Examples of questions which must be answered by this test are: How will people react to the design? Are the push buttons of the right size and shape? Are they properly spaced? What will be the effect of push buttons on the accuracy of dialing? Is this better service from the customer's viewpoint? What should this operation (namely, "push buttoning" rather than dialing) be called?

Testing the Market

A MARKET test, on the other hand, is directed at determining whether the product will sell and in what general quantity. It generally follows a product test and is a more complex undertaking. Usually more cities and model units are involved, and the product is "sold" to customers. To insure that sales results are not distorted, realistic sales channels and methods are employed. Specifically, the objectives are to obtain a broad measure of the size of the market and what kinds of people it consists of.

Pricing the product represents one of the more difficult aspects of these trials. It is axiomatic that the price must be established to produce a reasonable profit. To achieve this, however, the costs must be known. However, in pricing new products many costs are not known and must be predicated upon assumptions. Market testing of new products tends to permit the substantiation of these assumptions. Furthermore, through testing, different forms of rates can be tried to determine which is the most salable.

RECENTLY the market was tested for a de luxe type of bell. It is a three-stage bell containing a chime, a conventional telephone bell, and a loud-ringing bell. It was designed primarily for use in the home. The bell had been tested and subsequently modified. Many doubted that people would pay a premium for a bell, since one always has been furnished with each telephone. Yet, in the market trial, they "sold like hot cakes" and indications were that a broad cross section of the home market was interested. Lest the impression be left that all new products tested by the Bell system are successful, let it be quickly added that this is not so. On occasion we find

that there is no market or that it is too limited for certain products, either because of design or price. It may be that our technology has not reached the point of making a product suitable for marketing at a given point in time.

ROUGHLY TWENTY-FIVE tests covering a wide variety of services and instrumentalities are in process at the present time and all of the Bell operating companies are participating. The testing process saves the Bell system considerable money for it permits the learning of errors on a small scale under objective, controlled conditions. Although tests are not infallible in that they do not eliminate all of the risks, they certainly keep them to a minimum.

Products which survive the testing phase pass on to final design. Thence they are ready for production. As production schedules begin to shape up, market programing takes over. Its purpose is to guide the product into the market and to maximize its success. Essentially it involves co-ordinating the preparation of all the tools essential for selling, installing, maintaining, and administering the product. The goal is a complete market program ready for use just as soon as a product inventory is built up.

What Comprises a Market Program?

WHAT are the elements of a market program? They are many and will vary from product to product. However, several elements are common to all. For example, installation and maintenance instructions are provided to insure that installers are well-trained and capable of delivering goods when customers want them. There is no time to learn on customers' premises. Cost and rate studies are completed and rates filed and in effect. Salesmen are trained on how to sell the product. Sales appeals gleaned from the market test form the basis of the sales aids which are prepared. Since customers must know how to use the product, instruction cards are produced for the more sophisticated items. At least for mass market items, advertising programs also become a part of the program. TV and radio commercials, newspaper and magazine ads are developed to support the sales efforts. Sales estimates are made as a guide for establishing and programing production facilities.

One of the greatest contributions which market programing can make to insure the success of a product is the co-ordination of sales and production. To date it is only fair to say that this activity has not been fully developed. Until recently sales estimates were based on results of limited market tests. However, the Bell system has learned that more precise measurements are required. In the future, area-by-area introductions are expected to provide necessary information to insure that production keeps abreast of sales. To fail to accomplish this means either that potential revenues are lost because of shortages of supply or that capital is unnecessarily tied up because of overages.

Debut of the "Princess"

A NEW small telephone has just made its debut in four widely separated states. A review of the several marketing phases through which it has passed will serve to describe the comprehensiveness of new product planning as practiced by the Bell system. "The Princess," as the little telephone is called, was envisioned several years ago. It was conceived to provide customers with a choice of telephones, to help sell extensions, and to increase earnings. First tested for appearance utilizing plaster models, the reaction to the design was very encouraging. Later, after working models became available, a product test, in which two other experimental telephones were also used, was run in several cities.

Subsequently, the market for "The Princess" was tested by selling it in competition with standard telephones. This trial was followed by studies to determine in what colors "The Princess" should be offered and by several studies to determine what to name it.

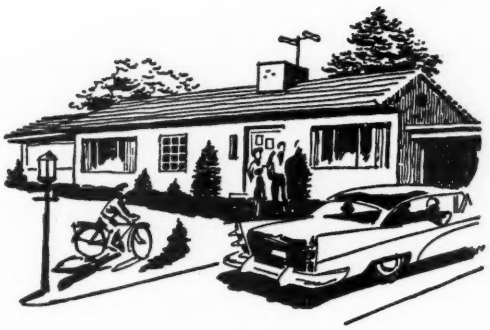
"The Princess" began to roll off the assembly line in June of this year. The product had passed its development tests, which were basically concerned with consumer acceptance of product features, and a limited test to determine its potential market.

THE one key question remaining unanswered is how many to produce—or, in other words, how many will be sold. A very elaborate research plan has been developed to answer this and other basic questions. The plan is designed to determine the magnitude of the market and its characteristics, to determine in what proportions the various advertising media should be used, and to provide guidance on how much should be spent to promote this new telephone effectively. Another important aspect of the program involves the determination of the effect of "The Princess" on the sales and production of other telephones presently in the line. Production of "The Princess" is increasing rapidly and will reach an annual rate of one million by the end of this year. Should sales indicate a market of that general magnitude, introduction of "The Princess" will be rapidly expanded throughout the remainder of the Bell system. However, if sales point to a much greater market, "The Princess" will be distributed area by area while production rate is being adjusted to sales.

It is this kind of long-range planning, with all of the attention to the many elements involved, which is producing new product successes for the Bell system. When the marketing cycle of any one product is completed, Bell companies can feel confident that customers will want the product and it will be a success.

In back of the new product program is the aim of increased earnings. As with any business, profits enable the Bell system to grow, to improve its capital position, to undertake research, to develop more new products, and by so doing to benefit the whole economy. With adequate earnings, research yields more new products which in turn lead to improvements in the standard of living.

The Telephone Household: A Profile



By EDWARD A. MacNEAL*

Higher incomes, better neighborhoods, and middle upper-class stability are among the characteristics of most of the U. S. A.'s 36.5 million telephone households. As a group they differ greatly from the almost 14 million households without telephones. And they control more than 90 per cent of the nation's buying power.

THESE conclusions are based on the first comprehensive study of the marketing characteristics of households with telephones. Issued recently by O. E. McIntyre Incorporated, New York-based mail-marketing firm, information in the report is derived from interviews among approximately 27,000 households. The data were gathered and projected to national totals by the Bureau of the Census.

The report proves that concentration on telephone families as a national market for consumer goods can be a profitable form of selective marketing. This conclusion is based on the fact that most products find their best markets outside the lowest income groups and among the more stable family units.

The McIntyre report notes, for example, that the median income of telephone households was $5,342, while the median income of nontelephone households was $2,570. More than 95 per cent of the households with annual incomes of $10,000 or more had telephones, while less than 50 per cent with incomes under $1,500 had telephones.

TELEPHONE ownership also is associated with more stable family units. For example, 77 per cent of the telephone households with the head of the family in the 35- to 54-age bracket had telephones. Among families with the head of the house under twenty-five years, telephone ownership was limited to 47 per cent. In addition, 79 per cent of the four-person households had telephones, but only 59 per cent of the one-person households were subscribers.

As a group, farmers have fewer telephones. This is partly explained by income, with 81 per cent of the farmers in the northwest region, where incomes

*Research director, O. E. McIntyre Incorporated, New York, New York. For additional note, see "Pages with the Editors."

are higher, having telephones. Only 31 per cent of the farmers in the South have telephones.

THE report is of considerable interest to market research, sales, and mail-marketing professionals who depend upon telephone books as a source list. McIntyre, for example, maintains a list of the nation's 36.5 million telephone households on individual IBM cards at its main Westbury, Long Island, plant. More than 400 employees work full time to maintain the list and keep it up to date, including such demographic factors as income, educational level, average rental, and length of residence.

IN conducting direct mail programs to introduce new products, increase store traffic, or sell magazine subscriptions, the firm mails to consumers selected according to tested characteristics. Selectivity in these mass mail promotions is a vital element, and information developed from the current study enables the firm to select consumer markets with greater accuracy.

SALES PROSPECTING from telephone lists is a major sales tool for some marketers. And telephone surveys, such as television rating systems, play an important rôle in consumer research. Most sales and marketing people have felt that telephone households were, in some way, different from other households. The McIntyre report, however, is the first available proof that these households are not only different, but represent excellent sales prospects as a national market.

Households by Area and Income

IN general, telephone penetration shows distinct variation by type of area. On an overall basis, 80.1 per cent of the households in standard metropolitan areas have telephones, and only 61.1 per cent in nonmetropolitan areas. Within these broad categories, however, there are important further variations.

Telephone ownership falls with the size of the metropolitan area. But the central city itself has lower telephone penetration than its suburbs.

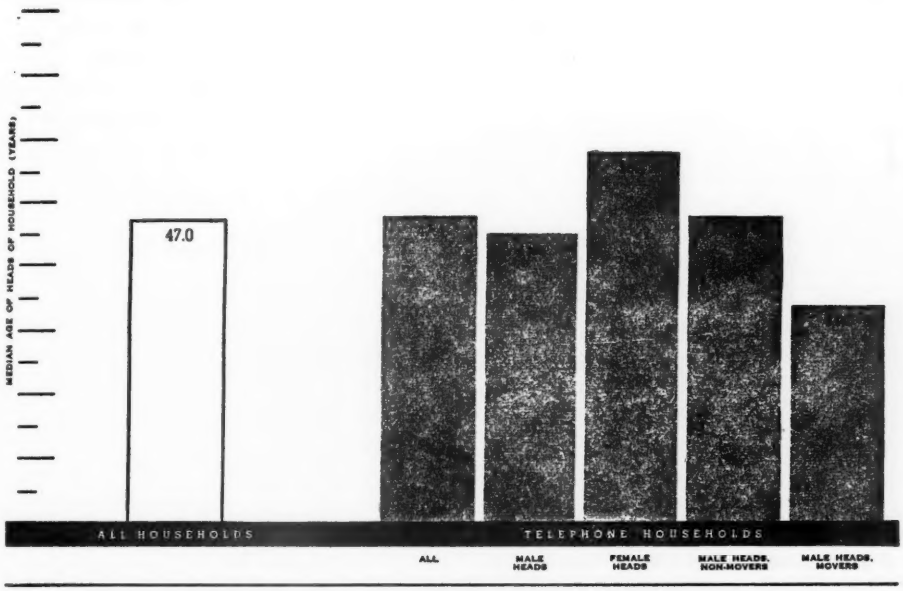
In rural farm areas, telephone ownership is at a 45.5 per cent level nationwide, increases to 58.9 per cent in rural nonfarm areas, and jumps to 72.8 per cent in urban, nonmetropolitan areas.

In terms of income, the highest percentage of telephones, 97.2 per cent, is found, naturally enough, among households with an income of $25,000 and over. The largest number of households with telephones, 6,805,000, is found among those with incomes from $7,000 to $9,999.

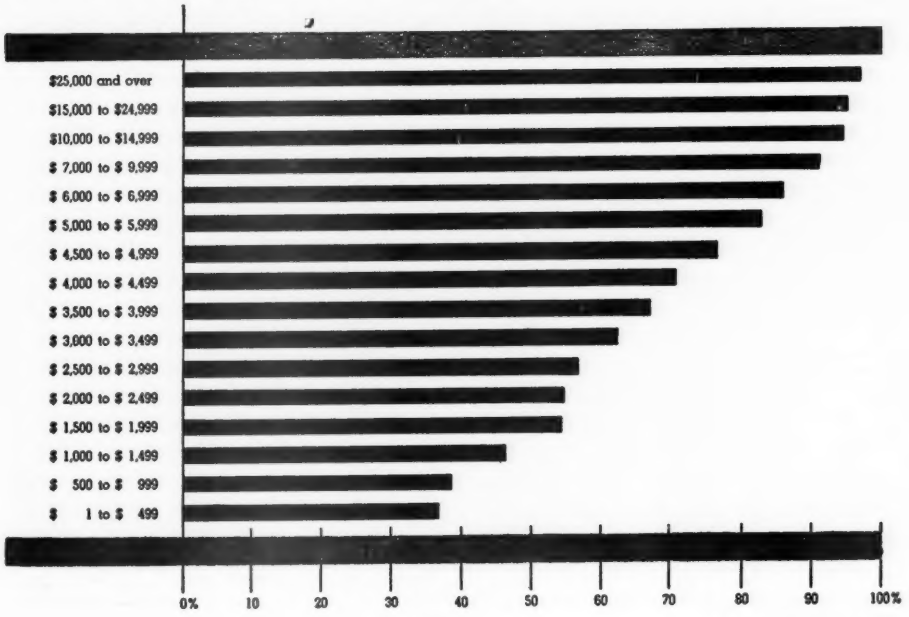
In this largest group, only 316,000 households are headed by women. The report shows a striking difference between households which have male heads and those which have female heads. Households with female heads are smaller, older, and have lower incomes.

Households made up of stable family groupings show higher telephone penetration than households made up of unrelated individuals or broken families. The highest penetration is among husband-wife families (76.3 per cent) and the lowest

HOUSEHOLDS BY AGE OF HEAD / MEDIANS BY SEX AND MOBILITY GROUPS



HOUSEHOLDS BY INCOME / TELEPHONE HOUSEHOLD PENETRATION



is where the head of the household is separated (39.9 per cent). Among all unrelated individuals (nonfamily groupings) telephone penetration is only 58.6 per cent.

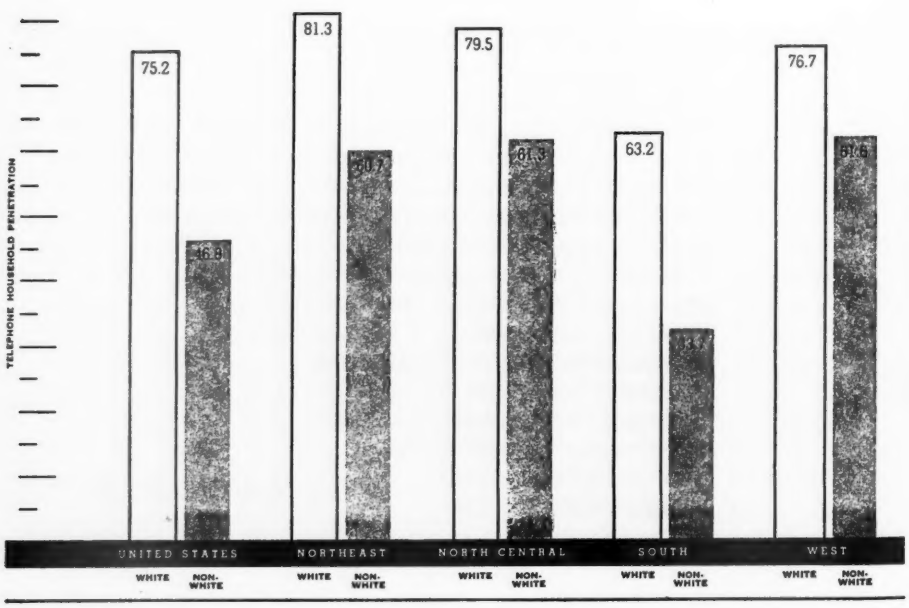
TURNING to the figures in more detail, there are striking differences in the composition of telephone households with male and female heads. Over half the telephone households with female heads are made up of unrelated individuals and 60.7 per cent of these female heads are widows.

Another 17.9 per cent have never been married. The balance are divorced or separated from their husbands.

On the other hand, 96.9 per cent of the households with male heads are family groupings and in 93.7 per cent of the households the wife is present. The percentage of telephone households with male heads who are widowers (2.5 per cent) is greater than the percentage who are bachelors (2.3 per cent).

Employment Status

THE employment status data in the report are divided into four categories: employed, unemployed, not in the labor force, and Armed Forces. Employment considered here is that of the head of the household.



TELEPHONE PENETRATION runs much higher among the employed group, with the result that a larger proportion of households have heads who are actively employed (79.7 per cent) than is the case for all households (75.6 per cent). The difference in employment status between telephone households with male and female heads, again, is great. Only 51.2 per cent of the female heads are employed, while 46.5 per cent are not in the labor force. On the other hand, 84.9 per cent of the male heads are employed and only 9.2 per cent are not in the labor force.

The report covers 11 general occupations for heads of households. Lowest percentage of telephone penetration (28.3 per cent) is among farm laborers, while the highest percentage (90.3 per cent) is among professional, technical, and kindred workers.

In terms of industries, the lowest penetration was found in agriculture, forestry, and fisheries (52.8 per cent), and the highest (86.2 per cent) in finance, real estate, and insurance.

Children

For the entire United States, 29.1 per cent of all households and 27.4 per cent of telephone households have children under six years of age. This percentage falls to 7.5 for telephone households with female heads, and rises to 43.6 per cent for telephone households with male heads who have moved within the year. The report classifies households by whether the head of the household lived in a different house one year previously or not.

In general, movers have more young children than nonmovers. This is consistent with findings on the age of the heads of households which show movers to have a median age of 34.7 years against a median age of 47.2 years for nonmovers.

However, the nonmover group has the larger proportion of children six to seventeen years. In the entire United States, 39.7 per cent of all households and 40.7 per cent of telephone households have family members in this age group. This figure falls to 18.5 per cent for telephone households with female heads, and rises to 46.1 per cent for telephone households with male heads who have not moved within the year.

Size of Households

Heaviest telephone penetration (78.9 per cent) is found among households with four persons. The lowest penetration (55.9 per cent) is among households with seven or more members. In numbers, however, two-person households rank first, with 10,613,000 of these having telephones.

In effect, the report illustrates that the marketer who analyzes his customers in terms of income, size of family, age of adults, presence of children, length of residence, and other characteristics will find real advantages in selling to telephone households. Since telephone subscription automatically provides an accurate directory listing, a nation-wide market is always available.

Certainly the report illustrates that, properly used, the telephone directory can be one of the basic marketing tools available to the consumer sales organization.

Volunteer Medical Engineers . . .

Telephone People Lend Helping Hands

By LeRoy J. RYAN*

He who gives freely of himself gains the most satisfying reward of all: The knowledge he has helped his fellow man. Daily exemplifying this warm spirit of giving is a group known as SAVE, Service Activities of Volunteer Engineers, which contributes liberally of its time and talent to aid medical research.

A TELEPHONE engineer solders a connection on a "bread board model" at his dining room table, which also doubles as a home workshop.

A communications maintenance man whose hobby is watchmaking peers through a jeweler's eyepiece as he attaches delicate wires to a watch-like device.

A young woman who spends her days as a telephone draftsman finds time at home to ink elaborate circuit diagrams.

This is SAVE—Service Activities of Volunteer Engineers—a unique program which puts the talents of telephone people to use in helping doctors solve medical mysteries and problems by developing instruments to aid organized medical research at the clinical level.

SAVE is a volunteer, "on-your-own-time" effort organized by Illinois Bell Telephone Company engineers in co-operation with research doctors at the University of Chicago's School of Medicine.

The idea for SAVE originated with William V. Kahler, Illinois Bell president and a trustee at the University of Chicago. Public service-minded Illinois Bell engineers voluntarily took up the idea—and thus the SAVE program grew. An exploratory meeting was held in 1957 between telephone engineers and the dean of

*President, Service Activities of Volunteer Engineers. For additional personal note, see "Pages with the Editors."

the university's medical school and some of his associates. It was motivated by the belief that Illinois Bell engineers' know-how in electronics, sound transmission, data processing, and general communications theory might help doctors develop new and more efficient medical instruments.

BREAKTHROUGHS in medical science frontiers have sometimes been delayed because medical theory and knowledge were often ahead of medical research instrumentation. The doctors at the exploratory session had long been anxious for competent help in such instrumentation development and were enthusiastic about the prospect of getting it from a group of professionals whose ideal of public service paralleled their own. The engineers viewed SAVE with equal enthusiasm. They saw it as a worth-while public service, and a medium that could bring credit and stature to their profession and expand their own professional horizons. They eagerly embraced the opportunity to engage in this creative research work which is so richly satisfying.

In its relatively short life, SAVE has made significant contributions and all indications are that more are on the way. Dr. Donald A. Rowley, of the University of Chicago Department of Pathology, puts it this way:

> The efforts of these engineers (in developing a heart-beat recorder) represent the equivalent of a $30,000 contribution to medical research . . . but their patience, understanding, and willingness to solve our toughest problems are invaluable. . . .

Their work can be measured in other ways, too. Another doctor sees one SAVE project as an instrument which conceivably can cut newborn infant deaths one-tenth.

What SAVE Is Doing

WORK is under way on some 14 SAVE projects. Two have been completed and the instruments are already in clinical use. The first is a cumulative heart-beat recorder, a compact three-ounce device to count heart beats while being worn during a full day of normal activity. It uses a tiny transistor amplifier and a watch mechanism modified to count heart beats instead of time.

The second is an electronic stethoscope developed by a four-man SAVE team. It gives both visual and audible signals of heart action and is ideal for use during surgery, since it lets doctors operate unencumbered by the traditional stethoscope.

Work is virtually completed on a training machine to teach laboratory personnel to identify cancer cells under the microscope and on a sensitive microprobe to be used to measure and monitor the radiation reaching certain tissues while they are subjected to X-ray therapy.

How Projects Get Started

SUGGESTIONS for SAVE projects generally originate with the university's School of Medicine, which screens from its researchers on pressing needs for development. Proposed projects also are checked against the following agreed-upon ground rules:

1. They should be confined to the area of electronics, sound transmission, data

recording and processing or communications theory, and allied arts.

2. The medical research problem involved must be fully outlined and requirements specified in detail.

3. Funds must be available for apparatus and materials needed by the engineers to bring the project from the idea stage to a working model.

4. It must be determined by screening research articles from all over the world that the problem has not been solved previously.

Modus Operandi

SAVE members review each qualified proposal and an individual or a team volunteers to work on a project in an area of particular interest to them. SAVE officers make no specific project assignments. An engineer may work on several projects with others or work on one alone, as he chooses.

A CO-ORDINATOR for each project provides liaison between SAVE and the university. The co-ordinator is also responsible for any funds which may be advanced for materials for his project and submits an accounting of expenditures to the sponsoring doctor.

A spirit of camaraderie quickly grows between the doctors and the engineers. Doctors think out their problems and suggest approaches which may lead to their solution. The engineers probe, experiment, invent, and "bone up" on medical terminology and methods.

ABOUT ONCE A YEAR the doctors and the full SAVE membership get together to discuss current results and future plans. Doctors explain in detail, by narrative and sketch, any new projects they have in mind—what requirements must be met and what success in their development could mean to medical research. The engineers say these meetings are one of the most satisfying rewards of the SAVE program. SAVE operates apart from direction by telephone company management, so for the purposes of formal action it has drawn up a constitution and bylaws. It is governed by a president, vice president, secretary, and three-man board of directors. Membership applications are reviewed by the board. A prerequisite to membership is agreement to assign inventions to SAVE for charitable purposes.

Most of SAVE's business is conducted at semiweekly luncheon meetings where progress is reported and problems associated with current and future projects discussed. If a member has a development problem, he outlines his case at these sessions and his colleagues pitch in with constructive advice.

People Who Comprise SAVE

THE members of SAVE are Illinois Bell engineers and skilled technicians (except for a woman draftsman who prepares sketches of instrument designs on her own time). They represent almost every field of telephony—transmission, plant, equipment, circuity, etc. In age they range from twenty-nine to fifty-nine. They have high ideals and a sense of public responsibility. Most have families, but some are single. Their hobbies range from boating to bridge, and from astronomy to skiing.

Their education varies and some of

them are studying for advanced degrees in the evening programs at local universities such as Northwestern. In their telephone careers, some have worked in research at the Bell Telephone Laboratories and in development work with Western Electric Company. Many have worked on the DEW Line, White Alice, and on various Army, Navy, and Air Corps defense projects where they were in the forefront of new breakthroughs and advances in the engineering and electronic arts.

Their SAVE work is carried on in home workshops, garages, dens, and basements. Some have well-equipped home laboratories, others operate with only hand tools and a soldering iron at the kitchen table. Although the background of SAVE members varies widely, they are united in a common desire to serve society.

Inspires Widespread Interest

As word of the SAVE program has spread, many inquiries have been received by the group from individuals, universities, hospitals, and other organizations throughout the United States and abroad. On just one device, the heart-beat recorder, for example, requests for information came from laboratories, authors, hospitals, and scores of organizations. A victim of heart disease asked for a heart-beat recorder for his doctor to use in his own case.

Most of the correspondence, though, requests information about obtaining circuit and design information for manufacturing the various devices. Many requests are also received asking for information relative to creating organizations like SAVE in other areas of the country. The officers of SAVE, in addition to their work on the various projects, are kept busy answering this correspondence and co-ordinating it with the university, when appropriate. They give as much information as possible, depending upon how far along a particular project may be.

This widespread interest in the work that SAVE is doing brings up the question of possible expansion of the program. If the enthusiasm of Illinois Bell's engineers is any criterion, the activity has a real future. It seems destined to grow and become a welcome weapon in the never-ending fight against illness and disease.

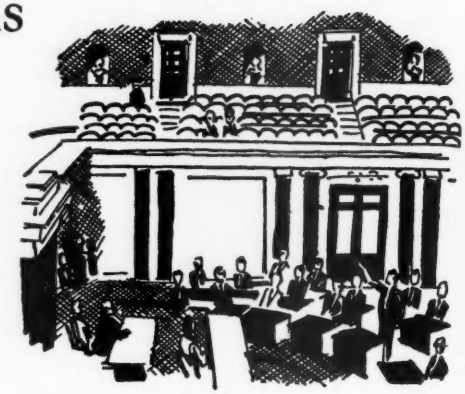
SERVICE-MINDED telephone employees throughout the country are becoming interested in the program and plans are under way in North Carolina, New York, and in a number of other areas to put their special talents to work in this out-of-hour charitable volunteer activity.

SAVE members are convinced that the project is virtually unequaled as an opportunity for personal satisfaction as well. Here is how one engineer sums it up:

> SAVE provides a wonderful opportunity for self-development and self-expression. . . . association with fine men of like mind. Perhaps . . . I could contribute in a small way to the relief of suffering or progress of medicine. I would feel fortunate indeed if such were the case.

"SAVE is typical of the manner in which telephone employees help their communities in a growing number of useful ways," one Chicago doctor said. "It springs from an awareness of the need for work and leadership in community affairs."

International Regulation of Communications in the Space Age



By FRANCIS X. WELCH*

Unless some international agreement and uniformity are reached on regulation of the space around us in the communications field, a chaotic condition could develop because of conflicting usage of the radio spectrum. It is hoped that substantial progress towards resolving the many questions in need of answers will occur at the International Telecommunications Union conference now under way in Geneva, Switzerland.

Two months ago, in the international convention city of Geneva, Switzerland, delegates from all nations to one of the twelve specialized agencies of the United Nations sat down at the same conference table to ponder serious questions of regulation of communications in the Space Age. This was the International Telecommunications Union and its latest telecommunications conference is expected to go through mid-November.

There have been other very important international conferences on world-wide communications since the turn of the century when Guglielmo Marconi's "wireless" first demonstrated that man could communicate across international boundaries without the need for wires or cables. When the bedlam of conflicting frequencies threatened to wreck the infant radio industry in the twenties, an international conference at Madrid was necessary to divide up allocations of the radio spectrum frequencies in some kind of orderly fashion. Likewise, the international meeting at Cairo, Egypt, in the spring of 1938 paved the way for further radio uses, including television. In 1947 another conference at Atlantic City, New Jersey, was supposed to have buttoned up various surviving gaps.

But today mankind stands on the threshold of space communications. Last winter, the world was electrified by the sound of a taped Christmas good-will message in the voice of President Eisenhower relayed via an American space satellite. If you were to drive today in the area of Annapolis, Maryland, you would see the Navy erecting towers for two-way radio relay with Honolulu, bouncing signals off the moon, scheduled for operation

*Editor, PUBLIC UTILITIES FORTNIGHTLY.

next spring. There is talk of artificial telecommunications satellites being put into orbit for the sole purpose of providing relays for radio messages between different points on earth.

LAST month the Russians hit the moon with a missile which transmitted data to receiving stations on earth right up to the moment of impact. There will undoubtedly be similar "lunar probes" by the United States and there is talk of sending "talking missiles" to Mars, Venus, and other planets. Obviously, there is much new ground to be broken at the current telecommunications conference at Geneva if international regulation of communciations is to keep pace with other space transit developments.

In fact, it would be safe to assume that one of the most important tasks before the Geneva meeting will be to decide upon an acceptable convention among all nations of the earth with respect to radio communication with outer space or via space satellites between terminals on the earth. Needless to say, this was a difficulty undreamed of only a few years ago. The problem is to study, once more, the international allocation of radio frequencies of the spectrum with a view to bringing and maintaining some degree of order. Otherwise, a veritable chaos would result from conflicting usage.

The reader may recall the recent rumor about a freak coincidence of a radio frequency being used by a Los Angeles fashion show, causing an expensive missile to blow up during testing. That rumor proved to be false, but such a thing could happen if radio frequencies for various uses are not carefully allocated and controlled.

Conference Gets Down to Work

PROBABLY the most impressive thing to date about the Geneva conference is the way its members from all over the world unbuckled their seat belts and got down to serious work almost as soon as they had deplaned at the Swiss city. The secretariat of the International Telecommunications Union in New York had planned a timetable of four months from its August opening, which would have carried it almost to the end of the calendar year 1959. The first act of the conference was to cut down its expected duration by one month, ending it in mid-November, if the schedule is maintained.

THE PERSONNEL of the conference consists of about 1,000 radio experts from almost all member nations of the U. N., plus administrative, stenographic, translating, and other assistants. Leading communication commercial interests, such as the Bell system, Western Union, Radio Corporation of America, Inc., International Telephone & Telegraph, General Telephone Corporation—to name only several American companies—have expert observers and consultants on hand. The work of the conference is divided into two separate but consecutive parts: (1) an administrative conference to deal with technical matters; (2) a plenipotentiary conference to draw up a new international convention which will supersede that concluded at the last international telecommunications conference twelve years ago at Atlantic City.

THIS writer has, of course, not been personally in attendance at Geneva; but the daily journal, the *Morning Electron,* which has been made available to him, is just about as complete and chatty a blow-by-blow roundup of what has been going on from day to day as any remote observer could desire. This little sheet gives both the delegates and the press not only reference to information supplied at the meetings, but a good deal of supplementary information as well. The style is lively and imaginative, departing quite widely from the staid and deadly informational fare usually supplied (if at all) at such technical meetings.

Credit for this is due to the hiring of expert professional public relations assistance. The United Nations headquarters in New York could well profit from this innovation, judging by the dreary releases still being handed out to the press at that great upended match box on the East river.

BUT we need only refer to some of the things in this area which have happened since 1947 to realize that no agreement drafted at that time, by even the most gifted and experienced top-flight experts, could long endure the stress of such an avalanche of changing ramifications of new and different usage.

1. An increase in world-wide transmission and reception of radio over the past decade in the order of *thousands of per cent*—making radio the truly effective "mass media" of all peoples and all nations, everywhere on the face of the globe.

2. A similar jump in the use of television in most western countries, and, to an amazing extent, in countries behind the Iron Curtain.

3. A sharp increase in the widespread *variety* of radio usage—for public purposes, such as government, public health and welfare—industrial purposes, especially by telephone, telegraph, railroads, aviation, and other public utilities, and with special emphasis on press and commercial photography—cultural and educational uses—medical uses, etc.

4. A tendency of military authorities in all major nations to pre-empt vast areas of the radio spectrum for radar, for remote warning devices, for missiles, for intelligence and counterintelligence techniques.

5. Swiftly developing techniques for infinitely greater utilization of ultrashort or microwave ranges of the radio spectrum heretofore not suitable for practical purposes.

6. Swiftly developing techniques in the area of astronautical communications, via earth and lunar satellites, and eventual interplanetary transmission and tracking.

CONSIDER, for example, that there are today in the world over 6,000 radio transmission stations, nearly a third of a billion radio receiving sets. (One for every twelve inhabitants of the globe.) Consider the estimated quarter of a billion dollars Soviet Russia has been reported to be laying out every year just for facilities to *"jam"* the Voice of America and other broadcasts emanating from the free world.

Consider the constant increase in the number of television transmitters throughout the world and the expanding number of amateur radio operators, multiplying in such countries as the United States,

the United Kingdom, and the Scandinavian countries. These, incidentally, are considered an excellent reserve of trained experts who are entitled to a great deal of consideration from a standpoint of assigning frequencies which they can use for their amateur communications activities. And since no more such frequencies are now available, new methods must be found whereby the amateurs, or "hams," can share such frequencies as are available.

Regulatory Proposals Have More Than Doubled since 1947

WHEN all these things are considered, it becomes apparent that a tremendous job of reconciliation and accommodation must be done—at the international level by the ITU, as well as at the national level by the Federal Communications Commission—in order to make the spectrum bear the traffic without interference or unintended jamming. A mere comparison of the number of regulations which were adopted at the 1947 Atlantic City conference (2,141) with the far greater number of proposals already tabled at Geneva (over 5,000) clearly shows the magnitude of the task to be accomplished.

Interspatial Communications

As for the area of space communications, it can truthfully be said that the sky is no longer the limit.

To explore Mars or Venus, scientists need satellites that can broadcast through millions of miles of space. Mars never comes closer to the earth than 34 million miles and at times cruises 250 million miles away, the National Geographic Society says. Venus is the earth's closest neighbor in space—apart from the moon and an occasional comet or asteroid—but it never swings closer than 24 million miles. It would take present rockets about 150 days to reach Venus.

Broadcasting over vast distances for such long periods will require a great deal of electric power. However, satellites are cut off from earthly supplies of electricity,

and conventional chemical batteries capable of supplying sufficient power weigh too much. Hence scientists are investigating ways for a satellite to manufacture its own electricity as it goes along.

One way is to convert solar power into electric power. The Vanguard I satellite, carrying six solar cells, has been transmitting since its launching on March 17, 1958. It represented the first successful application of solar power to satellites. Encouraged by Vanguard I, the National Aeronautics and Space Administration launched the now famous "paddle wheel" satellite, Explorer VI, on August 7th.

EXPLORER VI looks like an awkward cross between a windmill and a beach ball. But it is considered the most sophisticated satellite ever to soar through space, and it may carry the answer to the electricity problem. The satellite has four square paddles that jut out from the sphere. Each paddle contains 2,000 solar cells that turn sunlight into electricity. They provide a wide surface to catch sunlight, and are arranged so that at least one always faces the sun.

Even with its 8,000 solar cells, Explorer VI's three transmitters still use electricity faster than the cells can make it. So the primary transmitter remains silent for long periods while electric power is being built up; the other two low-power transmitters continue to run. During the primary transmitter's rest periods, data collected by instruments are stored in a digital computer. Upon a signal from the earth, the transmitter pours out in a few seconds all the information collected over several hours.

Some instruments record the impact of cosmic dust, or micrometeorite, which has long been considered a possible hazard for space travel. Other devices measure radio waves, the earth's magnetic field, and the radiation in belts surrounding the earth at altitudes of 600 or perhaps 35,000 miles. An instrument suggesting a primitive television camera maps in code the cloud layers over the earth. The coded chart is sent to an earth-bound receiver, and turned into a crude photograph of weather patterns. Eventually, scientists hope that satellites will provide detailed maps of weather all over the world. This would prove invaluable for forecasts and weather research.

Explorer VI takes less than thirteen hours to complete an orbit that ranges from 26,000 miles to within 160 miles of the earth. The sphere is expected to remain in orbit until late 1960 or longer. Among its fellow satellites still in space are Explorer I, Vanguard I, Sputnik III, Explorer IV, Mechta, Vanguard II, and Pioneer IV.

Around the World for Twenty Cents?

IF all this space tracking and satellite stuff sounds a bit like Buck Rogers fantasy be assured that it is not. What is being planned in the laboratory and on the drawing boards today, and what is being argued about from the standpoint of regulation at the Geneva meeting, may well mean the difference between butter and no butter on the bread of the telephone industry tomorrow. Considering the billions now invested in conventional plant and equipment, such as transoceanic cables, the idea of bouncing signals off a satellite for *pennies*, in point-to-point intercontinental radiotelephone communications, could mean drastic reorganization in the economic pattern of long-distance telephony.

But, such development might never come to pass without adequate or suitable international controls to permit practical operations.

Telephone people might well rub their eyes at the statement made in Washington, D. C., on May 6, 1959, to the effect that a telephone subscriber might put a call in to any point in the world for 20 cents after our scientific government people and communications experts are able to launch radio-relay satellites. The statement was made by Dr. Lloyd V. Berkner, president of the International Scientific Radio Union. He made it at a joint meeting of the United States committee of that union and the Institute of Radio Engineers. Berkner said that radio-relay satellites will soon revolutionize the world communications business. He advised the telephone industry and other communications industries to start preparing now for the revolution because "this is coming, and it is coming fast."

THE radio-relay satellites would hover in a fixed orbit about 22,700 miles above the earth. Dr. Berkner estimates that they could handle two billion telephone messages a year—*each!* By multiplying the number of satellites you could multiply the traffic capacity mathematically in proportion. You just compute two billion messages a year for each satellite.

How does he get that figure of 20 cents a message? Well, Dr. Berkner feels that if the telephone company now charges 10 cents for a local call, the cost of the additional message via the satellite relay services would not be more than 20 cents, regardless of the other terminal point anywhere on earth. Berkner estimated that in five years it will cost about $10 million to put a 500-pound communications satellite into a "hovering orbit." It has been said before, but it can be said again, the communications business is getting to be out of this world.

Who Owns Space?

EVEN the American Bar Association, usually concerned with such conventional branches of the law as real estate, taxation, etc., is now giving serious consideration to interspatial rights, ownership, obligations, and communications. It is mainly because of this aspect at the conference at Geneva that both the Soviet Union and the United States have sent particularly strong and competent delegations.

The United States, for example, lacks only nine of having a hundred experts at the meeting. They are led by that veteran regulator, former naval officer, and internationally known radio engineer T. A. M. Craven, twice a member of the Federal Communications Commission and still serving thereon. With Commander Craven concentrating on the engineering sessions, another veteran of international telecommunication conferences has taken charge of the administrative work of the U. S. delegation. He is Vice Chairman Arthur L. Lebel, a multilingual State Department expert who has been at this sort of business since the Cairo conference in 1938.

There is much politics involved, too—international politics. Right off the bat the Russians tried to get voting control of the engineering sessions through recognition of Soviet satellites. This was successfully resisted by Commander Craven, supported by the western nation delegates. The Reds

pulled another offside play in certain moves to go beyond the agenda previously agreed upon. And once more Commander Craven blew the whistle on them.

AS OF THIS writing the main item on the agenda at Geneva of interest to communication industries in the United States was a proposed reallocation of international short-wave frequencies among the so-called "have not" nations. This mainly involves questions of uniformity of transmission standards which might become very important in view of expected global transmission of news and other intelligence via such frequencies to such far off places as the North Indian province bordering Tibet and China, Laos, Central Africa, and other present or possible trouble spots. In short-wave transmission of images, there is a very definite lack of uniform standards. The United States uses 525 lines as compared with the sharper definition of most European practice (625 lines) and the coarser picture of British broadcasts (405 lines).

LIKE most international conferences these days the ITU meeting could easily founder on the rock of unresolved disagreement between the United States and Russia. For example, the United Nations had a special committee on outer space communications. But its work was so inconclusive that the whole knotty problem has been turned over to the ITU at Geneva.

Another knotty problem was the perennial question of permitting the Chinese Reds to attend even though they do not belong to the ITU. Similar requests came from such nonmember countries as Mongolia, North Korea, East Germany, and the so-called People's Republic of Viet Nam. The proposal was blocked by the United States and the United Kingdom delegation on grounds that it was out of order.

An amusing side light on the voting, on this question, resulted from similarity in sound between the English word "yes" and the Russian word "nyet." One Ukrainian delegate found that his "nyet" had been recorded as "yes" in the tallying. So, he was very careful thereafter to use English, stating his vote firmly as "no."

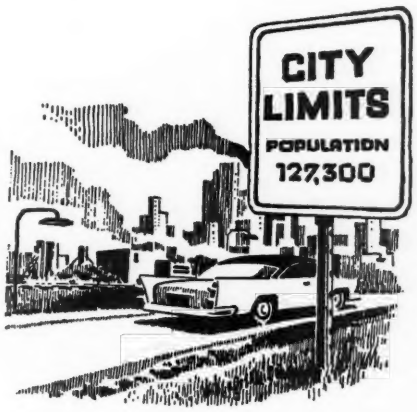
WHAT will come of the deliberations at Geneva in terms of net result will not be known for months. But the very complexity and urgency of the agenda should compel a certain amount of reasonableness on the part of all in attendance. It would obviously help neither the Reds nor the free world to have future worldwide communications deteriorate into man-made chaos because of a stubborn inability to get together on basic ground rules and logical standards.

Remember those simple bygone days when we thought of the legal distinction between "interstate" and "intrastate" as a subtle and difficult question of constitutional law? Well, this may cause some lawyer readers to smile; but it is a fact that one of the American delegates, specializing on legal problems of space communications, has actually segregated his work load in two files entitled, respectively, "interspace" and "intraspace." Such is the bewildering age in which we live, without benefit of any international (or interspatial) constitution.

Telephone Briefing on the Motel

By JOHN MAPPELBECK*

Once a cabin by the side of the road, for summer vacationists, the motel now seeks all-year occupancy, especially business guests. A prime new market for modern telephone service, which is a "must" in its promotion.



If all the people in San Francisco and Rochester went touring at once, we would have separate hotel rooms for all of them—14,000 hotels, 1.4 million rooms. Or for Minneapolis and St. Paul if they could go in different directions.

It might be that they would prefer motels. With a little doubling up, the 1,250,000 motel rooms would accommodate them all, and by next year they could all have separate rooms. In fact, motels now put up 1.5 million guests every day.

Mother Bell recently woke up with a start to the motels as customers for telephone service. The Bell system started making industrial surveys several years ago, to find out how we live, work, and use telephone service, and how we might be induced to use more, if it can be made easier.

The first of these industry studies went into hotels, with results now familiar. Hotel guests want to telephone; switchboards took care of their complex calls inside as well as outside; switchboard operation is an expense and often a personnel problem to hotel management. Bell engineers spent two years learning what hotels have to do over switchboards, and then devised equipment that lifts that work to the guests themselves. They dial direct from rooms for outside calls, dial for services inside the hotel, get messages, are waked up, and so on, by dialing, push buttons, lights.

And they love it! They do more telephoning, use more hotel service; money is made by telephone companies as well as hotels.

The Bell system developed a "package" containing all these do-it-yourself features. It is rather expensive, calling for an investment in improved phone equipment that, it was figured, about 800 of the largest hotels could finance. These are the caravansaries with 300 to 500

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rooms. Many of them are linked together in chain management. A sale to one would be a sale to others under the same management. The familiar story of bigger machinery for the concerns with big volume —or why we grow bigger and bigger.

Over all, the average is 100 rooms for each hotel. There are 5,600 hotels with less than 50 rooms, 4,200 with 100 or less. These will eventually be provided for by less elaborate equipment, but for the time being are a distinct market in themselves. If they could afford the "package," it would probably not save them any money, but they might have an added convenience for guests.

A Motel Is a Motel Is a Motel

NOT much thought was given motels, in this industrial study. Are they part of the hotel business, anyway? Certainly not marketwise.

There are now about 58,000 motels. There are no Waldorf-Astorias among them. They are growing in number, with 3,000 to 5,000 new ones being built yearly. Their average number of rooms ten years ago was about 15, which has now risen to 21, and promises to be 35 as new construction continues. It is said that some 500- to 1,000-room motels are in the planning stage.

ABOUT seven out of ten motels are family-owned and -operated. There are "Ma and Pa" motels as well as grocery stores, and both attract customers by convenience of location and friendly service. The small motel's customers do not live around. They come from afar. But they do send their touring neighbors.

Only about 17,000 motels have switchboards serving their rooms or cabins. For the most part, their guests get along with pay stations spotted around, and the office phone. As long as Ma and Pa are up, and if their phone number can be ascertained, they will take a message to a guest.

Not a very tempting market for telephone commercial managers, compared with selling the largest hotels, laying figures before directors. But that is the wrong way to size up the motel market.

TELEPHONE PEOPLE are discovering that the motels are almost as productive of new business as the hotels. One motel is converting to dial service for each 1.6 hotels. Selling the motels is a different proposition. It involves getting out and meeting motel owners, discussing **their** sales problems, their ambitions, the rapid changes going on in their business. Maybe it calls for a complete education in a very interesting business, learning its facts of life, and unlearning a lot of things that are now not so, whatever they may have been yesterday.

Meet a Top-drawer Motel Owner

THE motel began, and is still widely thought of, as an overnight perch for motor tourists. Typically, the touring family and vacationist. It was an outgrowth of good roads and increasing car ownership, and is still growing on that firm basis.

The first motel did not have to be elaborate. It was economical for families who could not afford hotel accommodations. It could be away from towns,

through which vacationists did not want to drive. It provided a place for the car, at no added expense, where a stop at a hotel involved a garage fee. This is still a sales advantage, even to larger motels.

The telephone traffic of these early motel guests was almost nonexistent. They were strangers in the neighborhood, knew nobody to talk to, would be on their way in the morning. Food requirements were modest, taken care of at a roadside stand. Slot machines provided candy, bathroom essentials, and other merchandise.

WITH such a picture in mind, the telephone salesman might go out and get acquainted with an owner like Ralph Osborne, at his $4 million "Surf Rider Inn" on the beach at Santa Monica, California (incidentally, in non-Bell territory). Osborne typifies motel modernity, and motel ambition, and how he got that way is a thumbnail history of the business he is in.

Osborne was a Kansas farm boy, who put himself through college operating a linotype on the home-town newspaper. Then he became an Indian trader in Arizona, with a post selling Apache Indians everything from a spool of thread to a casket—he did a good business in caskets. That was in the infancy of the motel. Tourists came along, wanted a place to put up for the night, so he added some cabins, and a service station, and a curio shop. By 1937 he had built up a business that sold for $50,000, plus two lots in Santa Monica.

When he visited that city to see his lots he saw growth potentials for motel business, and built an automobile hotel, which he operated successfully, while dreaming of a bigger one. It was a dream following Thoreau's advice, "When you have an air castle, put foundations under it." For nearly twenty years, with this dream motel in mind, Osborne traveled, took photos, clipped trade journals, gathered ideas. When he was ready to build, his plans were carried out by architects, contractors, decorators, and landscapists without change, an economy in building. Incidentally, the motel trade has an excellent trade press, which telephone people might read in getting acquainted with the field. Osborne's establishment was described in detail, with attention to features of special interest to the industry, by the *Tourist Court Journal*.[1]

OSBORNE'S establishment has 110 guest units, with individual baths, television, air conditioning, heating, and variety of decorations. It was built for beach sports, and also indoor living in bad weather. It parks 200 cars above ground, and 220 more in a subterranean garage. There are restaurant and bar facilities for 800 patrons daily.

Of special interest to anybody in the motel business, and good sales information for telephone people, is visibility. The place is open to people driving by, three-sided with the open side to the ocean, and a great deal of glass. The whole layout and character are seen at a glance. It is not cheap. Rates start at $12 a day, with $25 units most in demand.

Even the small motel sells on appearance, cleanliness, quiet, privacy, play-

[1] *Tourist Court Journal*, Temple, Texas, Bob Gresham, publisher and editor.
American Motel Magazine, Ken Eymann, editor, 5 South Wabash avenue, Chicago 3, Illinois.
Florida Motel Journal, J. P. Gaines, publisher, Orlando, Florida.

things for children, restaurants or coffee stands, and most important, landscaping. Osborne's professionals chose shrubbery easy to maintain, and also planted in open arrangements, to decorate without cluttering. Small motel owners generally do their own gardening.

Also, there is showmanship all around. Swimming pools for adults and youngsters are surrounded by a radiant-heated play deck, and there are such attractions as the "sun-tan tree," a giant tree made of aluminum, with huge metal leaves that reflect sunlight, for sun tan or relaxation.

Far from competing with luxury hotels, such an establishment offers attractions distinctly its own, for its own traveling public, and illustrates one direction in which the motel business is now growing. But Osborne maintains that the Ma and Pa motel has just as much room for growth, in its own direction. He points out that he started as a small operator himself, and says that the family-owned motel is catering to its own public, on economy, and is the kind of business that suits people who want to work for themselves.

The Big Target Is "No Vacancy"

IN most lines of business the sales curve is watched. The motel barometer is the "rate of occupancy." Telephone salesmen working in this field will soon learn to watch it, and study the various ways in which motel owners with different kinds of establishment, and particularly with different kinds of business brains, are working to increase their occupancy.

National overall occupancy last year is reported as 71 per cent by the *American Motel Magazine*. Thus, the industry had nearly one-third idle capacity. This year, it is expected to be 5 per cent to 10 per cent higher, the increase attributed largely to better general conditions, illustrating the sensitivity of the business.

With such an overall vacancy rate, thousands of the small motels were thinly occupied perhaps half the year, after the vacation season.

But there are always motorists on the highways, traveling salesmen and others, who drive for various reasons. Motels have some little-known overflow patronage, some promotion activities, that will be new to the telephone commercial men who get acquainted with their owners, and their problems.

Improved telephone service is one of the attractions they need in increasing occupancy, and telephone counsel is needed in achieving it.

A TYPICAL problem was that of the owner of a family-operated establishment with twelve rooms. It had had chiefly vacation business in the summer months, with an office phone, a pay station, a roadside coffee stand, swimming pool. The owner turned his attention to facilities for traveling businessmen.

The first thing that had to be settled was costs. Could he afford the investment? Distance from town had to be figured, the installation costs of a small switchboard, two trunks, color phones to match decorations, spring cords for convenience. There would be monthly charges, offset by some commissions on calls.

The owner hesitated. If business guests were not attracted, he would be saddled with fixed charges. Also, would there be difficulty in keeping track of toll calls, in collecting, and losses from skips?

TELEPHONE BRIEFING ON THE MOTEL

Phone Man Gave Motel Owner Facts and Sale Followed

THE telephone man questioned business concerns, asking about salesmen putting up at motels, if they selected those with telephone service, if they phoned ahead for reservations, and made a list of companies whose travelers stayed at motels as much as hotels. He also telephoned around to motel owners who had room phones, asking about collecting for calls, and referred him to owners who could assure him that this was no great problem. The engineering department offered a six-phone arrangement that would serve twelve rooms. This installation was ordered in, and the owner was so well-satisfied that he said, "If I were doing it again, I'd make it more automatic, direct dialing, 24-hour service."

And he added something useful for telephone men working in this field:

"You know, that telephone company guy never promised me anything, didn't try to pressure me, just got out and dug up information that helped me make the right decision."

Joining the "Room Phones" Network

BUSINESS guests at motels use a good deal of toll service—as much as hotel guests, perhaps more, according to Bell experience. The motel owner is more active in promoting toll calls. His commissions on these are added revenue he can count, whereas operating expenses are apt to absorb them in hotels. The added revenue hotel management can count comes in increased food, bar, valet, and other room services, increased by direct dialing facilities.

The motel owner installing direct dialing has 24-hour service, with toll calls recorded by the telephone company, and his guests make more calls.

Just hanging up another sign, "Room Phones," over those announcing air conditioning and television, brings in some business guests. But the real payoff begins as the phone-equipped motel receives reservations from other motels. There is a room-phone network that takes a little time and co-operation to participate in. "You splash me, and I'll splash you!"

This has been turned into a nation-wide

service for the 6,000 members of the American Motel Hotel Association, which publishes a directory with information about member motels, rates, facilities, and so on. When a guest registers at a member motel he is asked if he would like to make reservations ahead. If so, he is given information about motels, makes a selection, and pays an advance room charge, and the phone charge. He is given a check for the room charge, made out to the motel selected, which is his receipt, payable only to that motel. Presenting it when he registers, he naturally gets preferred treatment.

Motels Do a Good Overflow Business

RUBBING elbows with motel owners in his territory, large and small, the telephone commercial representative can get a liberal education in management and promotion—and also good selling material. He can, in fact, be a catalyst for ideas.

Looking at motel trade from the standpoint of vacationists, motoring families, it might be thought that a motel would find few guests around home.

Wrong! There is home-town business for the owner who knows how to get out and find it.

The home-town folks have relatives, guests, weddings, anniversaries. Their entertaining gets into local newspapers. The Smiths from Chicago are visiting the local Joneses. In these days, guest facilities are likely to be limited. Why not put the guests up at a motel? They will be more comfortable, have more freedom, out of their hosts' hair. If there are youngsters, there are motels equipped with playgrounds, pools.

The rule of "No Children" is a good thing to understand. Landlords who enforce it are not child haters, but adult quarters are not furnished to stand the treatment given by youngsters.

The motel owner who knows his town, and does a little advertising for guest overflow, can do a tidy business.

Then, there is the much larger overflow business from conventions.

Conventions are a large American industry in themselves, and booming. Nothing like them is found in other lands. In the early days of the First World War veterans, one Legion convention was held in Paris, where the French were amazed by this second tide of Americans, with their pranks and parades.

"Why have you come, messieurs?" they asked.

"The war—a reunion," they explained.

"*Oui,* monsieur—but which war?"

THERE are fraternal conventions that take over a city, and the business and professional conventions that draw thousands of delegates and visitors, to hear papers, study elaborate displays of goods and equipment, and be entertained by manufacturers and suppliers. The entertainment is generally lavish. If wives are invited, it can be amusing.

As business tries more and more to understand people, it is discovering that wives are people. If they can be persuaded that their man works for a nice company, they may have a word in decisions—who knows?

When wives are invited, they have their own entertainment. Business conventions are for selling. They must be kept out of husbands' hair. So, seasoned convention planners have them taken on sight-seeing

tours, see famous places, meet local celebrities, drink tea and cocktails, kept strictly apart until the final banquet. Such a schedule will have emergency entertainment for accidental half-hours. Wives go home saying, "What a nice company Bob works for!"

BUSINESS conventions get bigger and bigger, more expensive not only in physical machinery, but in the time of key men away from work. But they pay, and every city and town has its convention-promoting organization, and the motel owner who participates in the work of attracting conventions shares in their overflow. Distance from town is canceled out by motorcars and buses.

Ralph Osborne, incidentally, is active in community organizations, including Santa Monica's convention department, and does a thriving business in banquets. He has the facilities for them.

The motel owner with a much more modest setup can figure in convention promotion, and share in the overflow.

The Motel-size Business Meeting

GROWING up today, all around, is another type of business gathering that fits the times, and offers another kind of occupancy for the motel owner who does a little promotion. This is the small meeting of two or three dozen, maybe fifty or a hundred, specialists who have special problems too limited to get any attention in big conventions and professional sessions. For example, a sales force with one company, in scattered territories, will meet at a dinner, exchanging ideas, often just getting acquainted. Or the copy writers and account executives of an advertising agency will go to a resort for a week end of relaxation, and the developing of new ideas by the "crash" method. The ideas will be wild, bad, good, and out of them will come a few valuable ones.

Such meetings are held in restaurants, hotels, and motels. The motel has limited quarters, but can be a convenient meeting point for attendants from different territories. It will need a conference room, and, of course, telephone facilities. Its distance from town can be an asset, for it has the capacity for such a meeting.

IN the telephone business there are many executives with problems to be handled at such sessions, right-of-way managers, community forecasters, PBX trainers, writers, and others who meet with their own kind from other areas, and city officials, Bell and non-Bell managers—it is a flexible and productive type of huddle.

These people are not interested in entertainment, maybe not even food or bar service. They want to work, do a job, get back to the office. The expense account is not large. They may pay their own expenses, a lunch, a dinner. The motel meeting costs not much more, and affords relaxation and the opportunity for improving acquaintance.

This kind of occupancy is promoted by motel owners with small establishments, not too far from town, who watch news of business lunches and other get-togethers in town, get acquainted with business people who use this kind of meeting as a tool, and present the advantages of a motel huddle.

As business people experience the advantages, word-of-mouth advertising follows. It is a kind of promotion that can be carried on by a group of such motel owners.

The Exploding American Vacation

THE original motel was modest, possibly primitive. For the early motorists who braved dirt roads, drove through unbridged creeks, soothed horses.

"Let me sit in a hut by the side of the road and watch the world go by" was the idea—for one night.

There were no swimming pools, air conditioning, television—these "musts" of today had still to be invented. There was not always hot and cold running water.

The owner's investment was kept down, so that he made enough money during the vacation season to carry over with moderate expenses from October to May.

But strange things have happened to the vacation. One view of the universe is that it is exploding in all directions. And the vacation is expanding on the same principle.

It is getting longer. People in jobs press for more weeks off, with pay. They store up vacation weeks for one grand vacation every three or four years, get to Alaska, Hawaii, abroad—some two million Americans now visit foreign lands in the vacation season.

Vacationists go earlier, or later, taking advantage of off-season rates, and less crowded places. Which is all to the good for the motel owner, because it is estimated that 90 million Americans now take trips in their own country every year, that the number is increasing about 10 per cent yearly, and that 85 per cent of them go in their cars.

To meet the changed conditions, motel owners have to make heavier investments in attractions. They enjoy higher rates, a longer season, but the overhead to be carried in the off season is correspondingly heavier. Therefore, larger motels are being built, and in cities where other kinds of occupancy can be attracted.

AND MOTEL GUESTS are contriving new kinds of occupancy. Instance—the week-end patronage of the "hotel-motel" establishments, with a hundred rooms and upward, 50 or 100 miles out. This is a mystery to motel owners. Suddenly two or three years ago, in different parts of the country, city people began week-ending in these caravansaries. Until then, their week-end occupancy had been so low that rates were cut in half.

BUT the city folks were not bargain hunters. They came with their families, were good restaurant and bar patrons, played games, their kids used playgrounds. They liked things invented for them to do, such as barbecue cooking. One observant motel owner displays steaks, guests select and cook for themselves, like burnt steak just as well. Another motel is done up Hawaiian style, has an artificial jungle that would be a novelty in Hawaii, has a roasting pit for the guests who want to barbecue a pig.

These week-end guests have brought occupancy up, pay regular rates, are careful with things, are definitely civilized. Motel

owners say that this was their own idea; they came, and nobody knows why.

But one owner has a theory: "It is the American way of life," he reasons. "People have more money, more leisure, want to be entertained in new ways, want to live it up. There is the motel, away from it all, with the facilities. They use it. Really, we should have discovered it ourselves."

From far away, this view of the motel, as something new, something supplementing our way of life, is supported by the growing popularity of the motel in Australia.

THE scholarly *Manchester Guardian* reports it, is amused, maintains that motor tourists in compact Britain need only the traditional English inn, kept by the butler and housekeeper who married and put their savings into it when the Squire died.

But "Down Under" there are continental expanses.

Something more was needed by touring Australians. So, they discovered and have adopted that curious American institution, the motel—it is to be hoped with regard to British character.

There must be an Australian way of life, developing like our own.

It may not now have swimming pools, air conditioning, television.

But it will have them.

And room phones, with direct dialing, automatic message recording.

Something to watch, chums, in Australian commercial departments.

No Hurry about Such News!

WESTERN UNION has come a long way in good public relations and smart merchandising of telephone service since the dark times of yesteryear when a telegraph messenger, in a residential district, was often regarded as the harbinger of bad news—misfortune or accident, if not a visit of the grim reaper. Gone are the days when neighborhood children would follow the Western Union boy at a respectful distance to see if the lady who answered the door to receive the telegram would faint—as she often did. Nowadays, Western Union brings us flowers, money, birthday and other greetings, and the messenger will even sing. But Stanton Delaplane, in his whimsical column in the **San Francisco Chronicle,** recently raised the question whether it is not carrying things too far to use the wires to bring the nonessential or even unimportant too forcefully to our attention. Delaplane wrote in his department:

"A lot of communication comes to me by telegram.

"I have no wish to break Western Union's rice bowl, but I think wires should be reserved for urgent news.

"I slit open the yellow envelope with my thumb.

" 'Sally Rand, queen of bubble dancers who thrilled two generations, opens at . . .'

"This is not the sort of thing to telegraph about. It only reminds me I am the first of two generations who were thrilled by Sally. (The second one is no bunch of kids, either.)

"A gloomy thought. Send me such news by ox cart."

Mother Bell Needs Some New Friends

Was her research penalized in the recent toll rate ruling? Certainly it was not weighed in that decision. Suppose the man in the street knew more about Bell "labs" as a unique American institution. His opinion might affect rate cases, and regulation.

By JAMES H. COLLINS*

THE other day, Mother Bell was asked a very good question: "Why do you spend so much money on research? Wouldn't it be better to cut out the expense of Bell Laboratories, and reduce telephone rates?"

It was not put in just that way.

What actually happened was that Washington reduced long-distance rates nearly a million dollars a week, which is about half the Bell money appropriated for the laboratories. Company money, that is—there is also government money, spent for the government on defense research, which does not figure in company research.

Speaking for the Bell system, Mr. Kappel said the ruling penalized good research, and good management, and asked, "What about the long-range interests of the public?"

Anything touching toll rates affects independent companies, perhaps even more than Bell, and, speaking for them, Hugh A. Barnhart, president of Rochester Telephone Company, Inc., Rochester, Indiana, said that Washington, which in the past had protected their interests, been their Great White Father, had in this decision apparently forgotten them altogether.

This question did not enter into the ruling. How far telephone research has improved service, and kept rates within reason, was not asked. In such decisions, old Washington hands know that one thing is taken with another, and you get a ruling that is not what one interest hoped for, but satisfies some other in-

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terest, and everybody adjusts, as the telephone rate people did, going to work immediately on new schedules.

But why millions are spent by Bell Laboratories is still a good question. It has not really been asked. It is complicated, tough, and needs perspective.

First, the American telephone system in toto, independents and Bell, has been likened to an enormous electronic machine, on the order of a computer, that puts anybody in this country in touch with everybody, and increasingly in other lands. It serves industry with many different kinds of communication facilities. It seeks to lower business operating costs. It would be a startling probe to find out just what almost any business concern's expenses would be without telephone service. And for an individual or a family, in an emergency, this great computer is available instantly, for a single message in a year.

Second, this machine has been built up by private enterprise, without government subsidies, out of earnings. In most other lines of business such expenses can be passed along to the customer, but Bell Laboratories are supported entirely out of regulated profits—practically bank interest.

Third, during the first quarter of this century, this system was improved and extended chiefly by invention. It had a great deal of manual labor. It was an *electrical* business, and electricity was rather simple stuff until, one night, an inventor heard a mysterious voice that changed it into an electronic business.

Lee De Forest had an experimental electrical setup that might be compared to Bell's, and heard a strange effect that was the third anode, which he developed into his audion. In 1910 he broadcast Caruso's voice by radio, in 1916 broadcast news, and Bell used it in continental communication about the same time. It opened up vast new fields for electronic research, and set the stage for Bell "labs."

"Hi-Fi" in the Maternity Ward

It happened that the writer had some early experience of telephone research.

At the end of that quaint old First World War, when it was Western Electric research, done in the West street laboratory, in New York city, ground-to-plane radio had just become an actuality. Too late for that war, but significant for the next one.

Washington had dubbed all such developments "Liberty," or "Victory," implying that they were government achievements. This for patriotic, or perhaps political, purposes. There was a Packard auto motor considered a monster in its day, and talked of in connection with planes. It was called the "Liberty motor," and set engineers thinking of 1,000-horsepower engines. Planes were still kites. Some of the plane manufacturers after that war made wheelbarrows. These companies that had made such contributions to the war effort wanted to register the facts, and the writer embodied them in articles.

The director of the West street laboratory at that time was Dr. Frank Jewett, who showed me around the shop.

"Listen to this music, and tell us what you think," he said, one day, taking me into a small auditorium. From some hidden source came phonograph music, but of a different quality from that of the acoustical records of the day.

"That's the symphony orchestra, in Carnegie Hall," I was told. "It is recorded with a mike high up, as an audience hears it. It is electrical recordings, not acoustical, and gets more of the values. The phonograph people have been coming in here, listening, going away to talk it over, coming back . . . we don't know yet what it will be used for."

PRESENTLY the electronic phonograph appeared. That was "Hi-Fi" in its birthday suit, and the forerunner of tape recordings, broadcast programs, news reports—the world would before long be *telling* the news as well as printing it. Radio itself was still to appear.

Another device shown me was a machine that reproduced a picture on a spinning cylinder, and transmitted it to another machine across the room. They did not know what that could be used for, either, but these inventions foreshadowed Bell research of today, its policy, to develop new things of promise for the telephone business, whether or not immediate commercial uses were seen.

"Why spend money on such things?" might have been asked then. "Why not reduce telephone rates instead?" Pioneering went on, and eventually such contrivances brought in abundant revenue, from new telephone services.

That American Hero, the Inventor

WHEN De Forest heard electrons asking to be let out to do their stuff, telephone research was foretold. About fifteen years later, Dr. Jewett would convert Western Electric into Bell Laboratories, and Mother Bell would have a different job of explaining why she spends money on research.

"Research" has lately become a common word in our daily speech. What it means, the fellow in the street does not understand. The high school student consulting the encyclopedia will tell you, confidently, that he is researching.

While it was used chiefly among scientists, they pronounced it *"research."* When the man in the street began to use it he said *"re*search," which still brings an academic chill among scientists, to whom "search" is significant. But the dictionary says both forms are acceptable.

Publicizing Bell Lab Research Not Easy

THE populace talks familiarly about research, but without the understanding of an organization like Bell "labs." This makes the job of explaining difficult. Some way will have to be worked out, if there is to be public opinion back of the laboratories when rate cases are weighed. What people think of in connection with our progress is the American inventor, that odd-ball who has been with us since the legendary Yankee sat on the fence and whittled out a gadget to do his work for him.

The inventor is a person. He has an idea for a cream separator, a barbed wire fence, a telephone, and stubbornly sticks to it. His idea is likely to be cockeyed—see patent records. He does not search for new knowledge, is intent only on what may make his idea work. He will be ridiculed, kept waiting in offices, starved, swindled. His idea may be stolen—for story purposes it is always a formula in an envelope, something hidden back of a loose brick. A Goodyear monkeys with vulcanizing, fails again and again, one day drops a piece of rubber on a stove—Eureka! Henry Ford picks up a piece of steel from a wrecked French car, and it is lighter, stronger than any steel he knows, is vanadium steel, is just what he needs to put America on wheels.

AMERICA loves the inventor, and long after he has starved to death, will put him in the Hall of Fame. He corresponds to the British radical who, if he can manage to escape hanging, will some day be knighted.

It is sometimes apprehended that organized research will do away with the inventor. But consider him in his latest manifestation, Buckminster Fuller, one of whose self-supported domes covered our exhibits in Moscow, and stole the show. To the Russian populace, it was the American gadget of gadgets. A nice place, Moscow, for the American without honor in his own country—go to Moscow, the loud new international sounding board for fame and publicity—and maybe votes.

For years, says his Boswell,[1] Fuller was derided by engineers, mathematicians, and technologists generally, his "math" regarded as on the lunatic fringe, himself rated as a Jules Verne character. He has the odd-ball marks of the inventor, does not smoke, drink, when he gets money puts it into more tools, lives on soup. But he is sweet-tempered; waited for the public to grow up to his idea—such a simple idea, to do more and more with less and less—an inventor true to type, but with advanced knowledge—an American inventor for our own times.

[1] "The Breakthrough of Buckminster Fuller," by Robert W. Marks, *New York Times Magazine*, August 23, 1959. (Mr. Marks is writing a book about Fuller.)

Instead of the Odd-Ball, the PhD

EXPLAINING the inventor is a job of story telling, he is the underdog, the individual pitted against Bigness, David with a smooth stone from the brook to tackle Goliath.

Explaining Bell "labs" is telling a story without any hero, any villain, any heroine tied to the rails.

Suppose that, a few years back, Mother Bell had wanted some domes to cover her multiplying possessions, something lighter, quicker, and cheaper than steel or concrete. She would have set up a research battery for this particular quest. As a research director I know, in another industry, phrases it, "We'll put a bunch of PhD's on this—we have hundreds of them."

In time, that team would come up with something as good as Fuller's domes, maybe quite different, maybe a magnetic dome, an inductive cover, on the order of the container now being sought for hydrogen for power, at 10 million Fahrenheit.

If Fuller had gone to Bell with his idea, he would have been directed to get

patents, to protect himself as well as Bell, and if his idea were rejected, would have been told that the thing was being worked on along different lines. His idea might have been adopted, as was the De Forest audion.

It might well be that somebody on the team, or the group itself, would qualify for a Nobel prize, for some basic scientific discovery, such as that for the demonstration of the wave-nature of matter, awarded Bell's Clinton J. Davisson, jointly with George P. Thomson, of England, in 1937, or the three Bell scientists who developed the transistor, in 1956.

Imagine an old-fashioned press agent being called in to publicize such a success, for the better understanding of the man in the street. He might get the team together for a group photo.

"Heck, they don't look like scientists!" he would wail. "They might be vice presidents of banks, or account executives. How can you get the newspaper reader, the TV viewer, to believe that these boys have done something for him?"

If Hollywood thought that a film of that project would have box-office appeal, it would make the scientists *look* like scientists to the movie audiences, with wigs a la Einstein, shirt sleeves a la Edison.

It would have spies all around, stealing secrets. It might resort to the gimmick used for the story of the late Jerome Kern, who said of the film, "In my life there have been no ladies, so they put some in."

No Millionaires, No Big Bangs

Contrast Bell Laboratories with the Pentagon, from the angle of popular understanding, public support when rate decisions are being made, money appropriated.

> THE PENTAGON is constantly giving the public a choice between a tax cut and continued spending for defense. Everybody understands a tax cut, politics enter in. But there is always a majority for continued defense. Millions of Americans have served or are in the Armed Forces. There is a technical basis for understanding, absent in telephone research. The Pentagon is constantly in the news, firing off missiles, putting up mice and monkeys, letting off big bangs. It has Generals, Admirals, flyers, big shots from business. It is an institution. Its finances are practically unlimited. On the contrary, Bell Laboratories has no "brass," lets off no big bangs, is financed out of no public appropriations. It is staffed by scientists on salary, about as likely to get rich as college professors who stick to teaching because they like it.

It is a fact seldom mentioned that there are no millionaires in the telephone business, which is a business that has always belonged to the public, and run for it by men on salaries that hardly compare with those in unregulated business.

The general public has a dim conception of Bell Laboratories as a scientific organization. They have not had much publicity as such, nor has publicity been sought. New discoveries are announced right along, the public sees rabbits pulled out of hats. But the organization itself, and the farsighted policies that make these marvels of science possible, have not been very clearly explained—are hard to popularize.

BELL LABORATORIES now employs between ten and eleven thousand persons, in New Jersey and Manhattan. One-third of these are scientists—physicists, chemists, mathematicians, engineers, with some psychologists and other specialists in social science, because telephone research involves understanding of people, how they act, what they like and dislike, especially what they will find use for, and buy. Another third of the organization consists of technical people, assistants to the scientists. And the final third is made up of clerical workers.

About eight or nine of the scientists are engaged in specific projects, "applied" research. Around 500 work on projects involving "pure" research.

The line between pure and applied research is not very definite, but generally "pure" means searching for new knowledge, and "applied" means practical. Practical research may develop needs for new knowledge, and in a research organization like the Bell "labs" it is often necessary to decide how far to go into the abstract to adhere to the practical. Bell management is credited with making such decisions very ably. They are hardly likely to fascinate the general public.

Pure and Applied—The Transistor

MORE than twenty years ago a Bell research team was formed to investigate the behavior of electrons in solids, the "solid state" in contrast to the behavior of electrons in vacuum tubes. This deals with certain metals that are only fair conductors of electricity, semiconductors. It was pure research to the extent that new knowledge was sought, and applied research in that it might have practical results for the telephone system. Other laboratories might have undertaken the same investigation, but did not. Mother Bell did, says Francis Bello, in an excellent *Fortune* article about the laboratories from the scientific angle.[2] The project was started by Dr. Mervin J. Kelly, then a laboratory vice president.

For chief theorist, William Shockley was hired from Massachusetts "Tech," but the Second World War interrupted the project. When it was resumed, in 1945, a young physicist, John Bardeen, was added to the team—he had distinguished himself in solid state physics. The team concentrated on silicon and germanium, semiconductors.

"To explain the failure of one of Shockley's pet schemes for building an amplifier out of a semiconductor," relates Francis Bello, "Bardeen proposed a new theory about the behavior of electrons on the surface of solids. In the course of testing the new theory, Walter H. Brattain, a gifted experimentalist, then made some provocative observations about electron flow under certain conditions.

"The upshot was that Bardeen and Brattain devised what is called the point-contact transistor, an amplifier that worked differently from the one visualized by Shockley. Concurrently, the ingenious Shockley conceived a brand-new variation, called the junction transistor, and it is upon this version that most development has been concentrated."

THIS quest took ten years, during which there was nothing to interest the general public. It might have led to

[2] "The World's Greatest Industrial Lab," by Francis Bello, *Fortune*, November, 1958.

nothing. And when the first experimental transistors were developed, there was nothing much to say, except to suggest that, when the difficulties of cost had been conquered, fitting the delicate hand-made transistors for mass production, perhaps the man in the street could have a radio set small enough to go in his pocket. For the time being, he could be shown a picture of the transistor, which looked like a bug.

Ten more years were to pass before the real uses of the transistor were found in "miniaturization," now going on. Receiving sets, electrical appliances, and many kinds of manufacturing equipment, are being made smaller with transistors, now made by many factories in this and other countries.

The payoff in the telephone system is something the public can understand, as a factor in rates, for transistors make it possible to build smaller exchanges, to consolidate several exchanges in a building that was formerly needed for one.

"If you can see it," says a plant engineer, "it is too big."

The transistor conforms with Buckminster Fuller's idea—to do more and more with less and less.

The Nobel Prize Never Awarded

ANOTHER Bell research that illustrates the difficulty of explaining work in progress, the lag between research and results, and the line between "pure" and "applied," is the one given Karl Jansky, a fledgling physicist, in 1928. He was twenty-two, and he was set to track down noises giving trouble in the Bell overseas radiotelephone.

Noise has always bothered Mother Bell. As her service gained distance, it lost quality by noise of many kinds, some of it even generated by subscribers' voices.

JANSKY FOUND that most of the noise came from lightning flashes, some halfway around the world. But there was a steady hissing that came from a particular region of the sky, and this was found to be coming from an area in our galaxy 27,000 light years away. Up to that time, astronomers had studied the universe by looking at it and photographing it, through larger and larger telescopes, also analyzing it spectroscopically. Now it could be heard! It was broadcasting radio programs. Jansky had discovered the basis of radio astronomy. He would probably have received a Nobel prize had he lived—Jansky died in 1950, at forty-four.

Bell laboratory policy on this discovery left off with the knowledge that made it possible to clear up the transatlantic radio service. Mother Bell will carry on pure research to the point where applied requirements are served, but does not go off into the wild blue yonder of abstract research. Radio astronomy was left to others. The Navy is now building, in the mountains of West Virginia, a radio telescope with a 600-foot diameter bowl, about the size of the Yankee Stadium in New York. It will have a range nineteen times greater than the 200-inch telescope at Palomar, California, theoretically 38 billion light years, according to the *Scientific American*, perhaps greater than the range of the observable universe. It may

answer some of the questions about the size, age, and history of the universe; maybe the one most debated, whether it is static, or exploding.

The Times Are Ripe for Understanding

APART from building public opinion that might be helpful in rate regulation, and financing, there are other ways in which Bell Laboratories could benefit by understanding of its organization.

The times seem to be ripe for it.

There is a young generation coming up, educated in science, interested in the work of such an organization, capable of discussing it with people not so educated. Some of them are destined to join in it, could be inspired to do so by more information.

Then, the economists are holding out bright promises for our future. Tomorrow, the man in the street is told, he will have a $10,000 pay check, there will be a thousand billion dollar gross national production, a car for every member of the family, one swimming pool outdoors and another indoors, a week-end house away from it all, more leisure, more travel, a job that will be mostly supervisory, executive, push button to do work.

"He will have a one-hour week," scoffs a cynic, "gyro to the office to pick up his pay check. Why not? Just project the curves!"

However, there is somebody else looking toward a bright tomorrow—Ivan, with his whole soul concentrated on becoming what we are today. By then we ought to be far ahead. Until Ivan put up his sputniks two years ago, we rated him as a hopeless laggard in technology, education, and production. It may well be that he fed us some of the dope about his backwardness. Our cold war with him was thought of in military terms.

TODAY, we see that Ivan is out to beat us in research, production costs, trade, prestige. He has alerted us to shortcomings imposed upon ourselves by overconfidence. Yesterday, the American visitor coming back from Russia was asked, "Will the Communists attack?" Today the interest is in a score, "Are the Russians ahead—or still behind?"

Mother Bell has her vision of tomorrow.

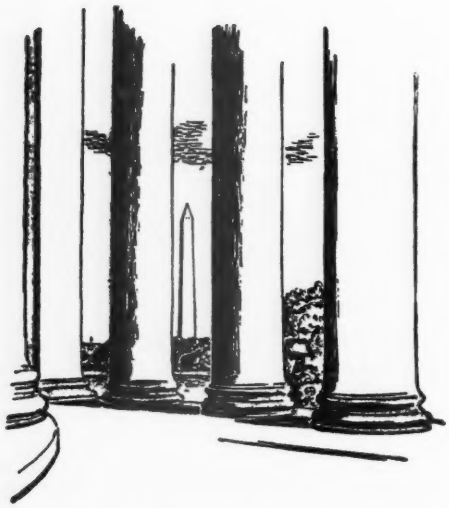
"Tomorrow, every child born into the world will be given a permanent telephone number," says one Bell executive. "When he is able to talk, he will be given a wristwatch set, with push buttons and a viewing screen. He will be able to call up any other child in the world, and see him on his screen, and the instrument will automatically translate languages."

It is no secret that Bell Laboratories has practically all the elements of such a system in the works. One research not yet mentioned is: "What will the directory for such a system be like?"

Probably an electronic memory.

"CONGRESS should not wait too long before tax reform is decided upon and put into effect. There is grave danger we will wait until a recession gets deep to do something about it."

—LOTHAIR TEETOR,
Former Assistant Secretary of Commerce.



Washington and the Utilities

Hector's Heresy Stirs the Press

A NUMBER of editors of daily newspapers, especially in Washington and New York and in the financial circles, are expressing some degree of interest, if not admiration, for the unorthodox conduct of Louis J. Hector. He is the Miami, Florida, lawyer who came to Washington in 1957 to become the newest member of the Civil Aeronautics Board. In mid-September, however, he resigned and at the same time informed President Eisenhower in a 72-page memorandum that he no longer felt that the CAB was performing a useful function. (An earlier critique of CAB by Hector was reported in PUBLIC UTILITIES FORTNIGHTLY, September 24, 1959, on page 513.) Hector did not confine his blast to the CAB, with which he may have some fair degree of familiarity in the less than two years he has served. He also leveled criticism at the federal regulatory commissions generally—the Federal Communications Commission, the Federal Power Commission, the Interstate Commerce Commission, the Securities and Exchange Commission.

What these editorial writers seem to overlook, with all due sympathy for Mr. Hector's honest criticism and frustrations because of bureaucratic red tape, is the fact that his recommendations for correction might be more destructive than the abuses he would like to correct. Yet, the White House is reported to be giving careful attention to Hector's criticism of the federal regulatory process. That this development cannot be dismissed as only one man's opinion is suggested by the continued investigation of the House Subcommittee on Legislative Oversight and pending legislation to amend the federal Administrative Procedure Act, which are viewed by both the regulatory commissions and the American Bar Association with much concern.

HECTOR does not condemn federal regulation, as such. On the contrary, he thinks it could be made more effective if the policy-making and administrative duties were transferred to an appropriate executive department, while judicial and appellate functions were transferred to an administrative court. He would leave investigation and prosecution to the Justice

Department. But, he says, "an independent regulatory commission is not competent in these days to regulate a vital national industry in the public interest." The danger to regulated interests is that Hector's sweeping proposal may be accepted too literally and drastic procedural changes seriously urged in Congress.

OBVIOUSLY Mr. Hector's recommendations, if carried out, would make mincemeat of the federal commissions. Be that as it may, his suggestions were hailed by the daily press simply because it is almost heresy for a federal officeholder to resign with the suggestion that neither he nor his agency is worth its keep, as far as the taxpayer's money is concerned. The Scripps-Howard chain in a syndicated editorial stated:

> Mr. Hector has committed the heresy of quitting the job because he thinks the CAB "is not competent in these days to regulate a vital national industry in the public interest."
>
> The gist of his thinking is that there is too much regulation in the air-line industry. It is being hobbled, he says, by a system which doesn't work. If the government would just stick to protecting the public from excessive fares and unfair competitive practices, it could leave the details to the "free play of competitive forces."
>
> The railroads, as recent developments have illustrated, have been hobbled, and very nearly put out of business, by overregulation. Judging from Mr. Hector's comment, the airlines are threatened with the same affliction.
>
> What Mr. Hector said of the CAB is more or less true of all government regulating agencies. More Hectors on the agencies would help—but more Hectors in Congress would do better, for it is Congress which creates the agencies and turns them loose to wallow in a sea of red tape.

THE New York *Journal of Commerce* agrees with Mr. Hector that in trying to be both prosecutor, regulator, and judge, the federal commissions are engaged in contradictory effort. "Each wears too many hats to wear any of them properly." Yet the *Journal of Commerce* was alive to the danger of throwing the regulatory baby out with the bureaucratic bath. The *Journal* states:

> Criticism of the commissions is frequently as contradictory as the functions of the commissions themselves.
>
> On one hand it is charged that the commissioners mire themselves down in details at the expense of policy. On the other, it is said they hand over too much responsibility to their examiners —a case in point (involving air services in northwestern states) being that of a hard-working examiner who spent nearly two years collecting opinions and exhibits, digesting them and preparing his report, before the case ever came before CAB.
>
> To that we can say only this: Commissions can take back some responsibilities handed to examiners, but only at the cost of miring themselves still further down in detail. They could, as a body, give even more weight to the claims and counterclaims of "interested parties," but only at the cost of slowing their actions up even more. They could speed up their decisions, but only at the cost of "due consideration."
>
> Finally, the regulatory agencies could, like the federal courts, be insulated by law from outsides pressures, including those from Congress and the White House. But, operating in such a

legislative vacuum, an inevitable price would be even more horrendous clashes between the policies of one and those of another.

We don't doubt that the agencies can be improved. But these are factors to be borne in mind by anyone who sets out to do it.

THE Baltimore *Sun* agrees that federal commissions occasionally fall into a pattern of too much regulation, stating:

> Without going all the way with Mr. Louis Hector in his reasons for resigning from the Civil Aeronautics Board —and without reading the 72-page memo he sent to the President—it is possible to sympathize with him. He thinks the board is doing entirely too much regulating of an industry which could stand on its own feet. He also feels that if the CAB spent less time on regulating minute details of civil aviation, it could do some long-range thinking about the industry as a whole. The details, he says, "could better be left to management discretion and the free play of competitive forces."

The *Sun* editorial spells out what it regards as a dangerous tendency towards overregulation on the part of the CAB:

> The safety of passengers and crews, and of groundings as well, demands control by government over the standards of transport. To some degree, because of its national and international importance, the economic health of the industry must be safeguarded, too. But the second or economic aspect has come to consume more and more of the agency's time, and the political pressures inevitable upon an agency which has almost dictatorial powers become increasingly evident. So the agency ends by regulating every conceivable aspect of the industry's day-to-day functioning while big issues hang on year after year without a decision. It is to be hoped that Mr. Hector's memo will not disappear into a White House wastebasket. It may come in handy if some day the functions of the CAB get a long overdue overhaul.

MR. HECTOR'S concern over the shortcomings of the CAB seems to have been sparked principally by its handling of the so-called Seven States case. In this case a CAB examiner was thrown into a complicated problem of working out a federally subsidized local air service without any ground rules or policy directives. After a long and tedious record surcharged with propaganda and pressures from various sources, the examiner worked out a plan only to have the commission start the process all over again. *The Washington Post* comments on this criticism sympathetically, as follows:

> It seems impossible to quarrel with Mr. Hector's thesis that, in policy-making cases of this kind, the agency should give general directions to its examiners so they will not waste time floundering in the dark. Likewise the need of the examiners for assistance in such mammoth tasks seems obvious. Mr. Hector is not thinking, however, in terms of such relatively modest adjustments. His challenge goes to the heart of the present policy of combining the whole range of regulatory power in a single body. He would give to the executive branch the functions of "rule making, policy formulation, planning, and routine administration." The task of "deciding major litigated cases and of hearing appeals" would then be assigned to a special expert tribunal.

Taking a quite different approach, he would also remove from regulation many of the small details with which the agencies now concern themselves and have them concentrate on the larger problems of unfair competition and excessive profits. It is by no means certain that application of these ideas would not lead to greater difficulties of a different sort, but we are glad that Mr. Hector has issued his sweeping challenge to the present regulatory systems. Many of them are bogged down with cumbersome ritual and unnecessary formalism that ought to be confined to the adjudication of controversies. Perhaps it is time for some bold experimenting as well as bold thinking.

Antifeatherbedding

RAIL unions' demands for a $750 million increase in wages has been countered by the railroads with a wage proposal that would cut $1 billion from the industry's payrolls. In addition, the rails are preparing to put their "featherbedding" campaign into high gear. While the railroads claim that job practices in the industry cost them an unnecessary $500 million a year in expenses, the unions maintain this figure is grossly exaggerated. Some spokesmen for labor, however, have agreed there is some need for revision of work rules in the industry. The average railroad worker earned $112 a week in 1958, a figure which is not out of line when compared with the pay of truck drivers, steel and other workers.

The President recently declined to appoint a presidential commission to investigate railroad working rules as he said he did not wish to interfere with collective bargaining.

Amateurs Asked for Vanguard Communications Data

RADIO amateurs around the world are being asked by the National Academy of Sciences in Washington, D. C., to record during the coming weeks as many transmissions of the new U. S.-IGY satellite, 1959 ETA (Vanguard III), as they can.

Dr. Richard W. Porter of the academy's space science board issued the appeal through the American Radio Relay League. Dr. Porter is chairman of the earth satellite technical panel of the U. S.-IGY program, under which the Vanguard III experiments were developed. The satellite launched recently by the National Aeronautics and Space Administration is transmitting information about solar X-radiation, on a frequency of 108 megacycles. Scientists of NASA and the Naval Research Laboratory are anxious to obtain tape recordings of transmissions that show the effect of any solar flare which might occur when the satellite is below the Van Allen radiation belts.

Notification of such flares will be sent out via the American Radio Relay League so that tapes for these periods can be sent to NASA. Persons making tapes are asked to retain them for at least forty-eight hours pending notification of flares, and to send in tapes only for the flare periods. The satellite also carries a new type of magnetometer, to make more accurate measurements of the earth's magnetic field. These data, however, will be stored, and transmitted only upon interrogation by special tracking stations. The satellite is orbiting the earth approximately every 130 minutes at altitudes ranging from about 315 to 2,300 statute miles. Its batteries have an expected life of three months.

Financial News and Comment

By OWEN ELY

1959 an Outstanding Year for The Telephone Industry

THE year 1959 has marked many important developments for the two major telephone companies, American Telephone and Telegraph and General Telephone & Electronics. AT&T announced its long-awaited stock split (3 for 1), together with an increase in the cash dividend rate to $3.30 on the new shares; no subscription rights were issued this year, but rights to convertible debentures seem a possibility some time next year. General Telephone announced its second big merger (in addition to the numerous acquisitions of small independent telephone companies over the years); Sylvania Electric was merged on a share-for-share basis and the word "Electronics" was added to the name.

A large number of small telephone independents are being acquired by larger companies, as the owners decide to retire or find it difficult to finance needed improvements in service, and this trend appears likely to continue. While holding companies such as General, United Utilities, Central Telephone, etc., are acquiring independents, the REA co-ops are entering the pictue as well. Thus, about one-fifth of all independents seem to have been absorbed in one way or another in recent years. The formation of REA telephone co-ops, and of small private companies financed with REA loans, which have acquired other groups of small independents, is a relatively new variation on the older theme. This REA financing trend has been especially noted in Illinois and Indiana and other states in the Middle West and Southwest. The ability to obtain an REA 2 per cent loan up to 90 per cent of the purchase cost of these companies, adding only 10 per cent in equity money—thus providing high equity leverage at low cost—is doubtless tempting to local promoters despite the burdensome restrictions which REA may attach to their loans.

WHILE expansion in the telephone business was slowed by the recession in the first half of 1958, operations this year showed a sharp recovery in line with

DEPARTMENT INDEX

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that of other utility groups. Revenues of the Bell system for the three months ended May showed a gain of 10 per cent and for the first six months General's telephone revenues gained 16 per cent over last year. (More recent gains may have been retarded by the steel strike, however.) Net income made an even better showing; Bell's earnings on average shares in the twelve months ended May 31st increased to $4.94 compared with $4.39 in the previous twelve months, and for the calendar year 1959 earnings may approximate $5.20. General Telephone's earnings for the twelve months ended June 30th were $3.32 *versus* $2.98 in the earlier period; and some further gain, possibly to as high as $3.50, appears likely for the calendar year.

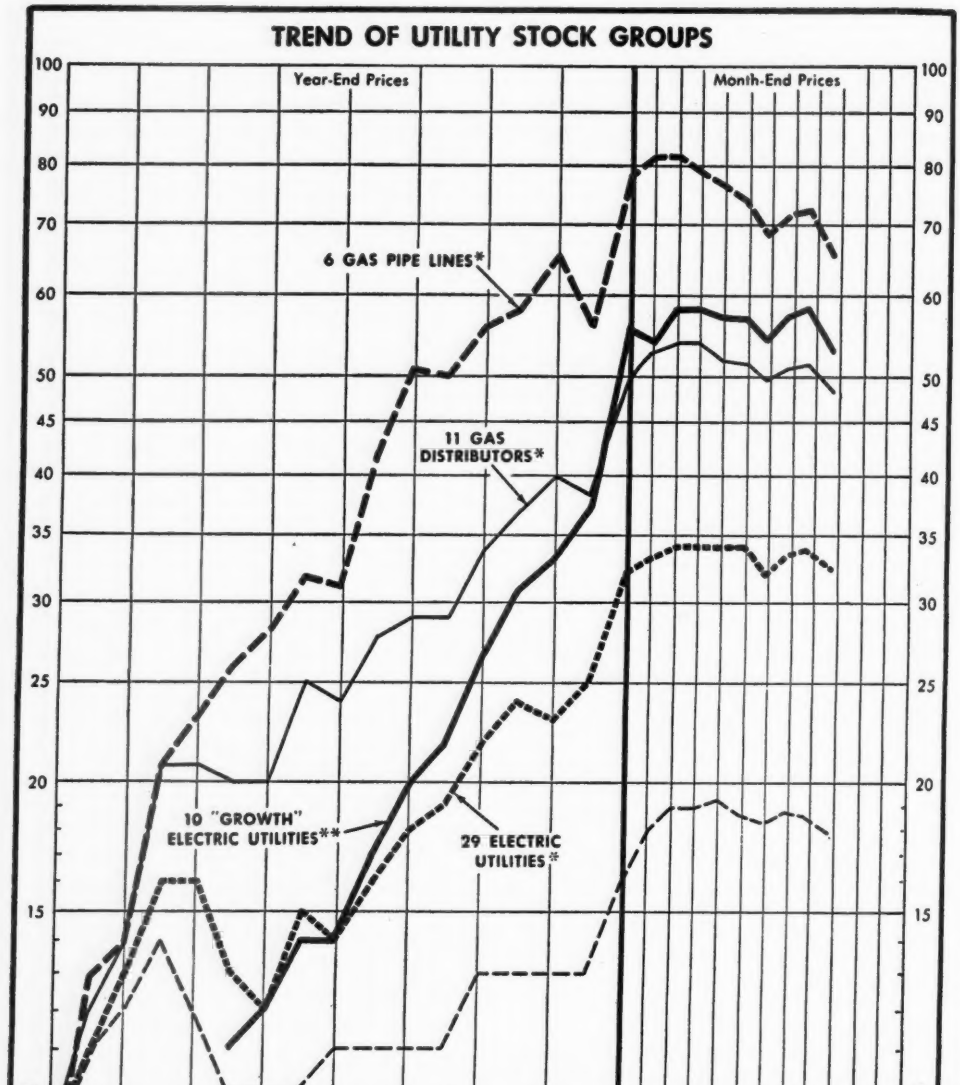
The Bell system has continued its widely ramified research and defense activities in addition to maintaining the rapid growth of telephone facilities needed to match the increase in population and business activity. For defense purposes over 8,000 miles of "bypass" routes have been built which avoid major population centers entirely, so that if the latter should be destroyed by bombs communications could still get through. Now it is possible to interconnect any two major cities in the country without going through any of the "most critical" areas. Bell also remains active in many other divisions of the national defense program.

GREAT improvements have been made in the cables which contain hundreds of individual wires. The first transatlantic cable to the continent of Europe was completed recently. Communications are now available to 125 countries and overseas conversations increased 11 per cent last year. Other cables are being installed, and new devices will increase the capacity of the older ones.

The third microwave radio relay route across the U. S. was completed in January and another is being built; the latest will handle 11,160 conversations at a time, over three times as many as the previous type. Today the Bell long-distance lines carry not merely conversation, but many other kinds of communications, such as pictures, computer or other data, TV programs, control and metering signals, etc. Millions of people can now dial long-distance calls without operator assistance. Billing is being mechanized by machines which can "read" cards and prepare bills automatically. Electronic data processing machines help with many clerical operations. In its November, 1958, issue *Fortune* published twin articles on the Bell Laboratories and on "Tomorrow's Telephone System," giving technical details of the electronic switching system which will soon be introduced experimentally, and other scientific goals.

GENERAL TELEPHONE is also getting into the research field very actively. In addition to the General Telephone Laboratories near Chicago (where some 250 scientists and engineers are working on a variety of projects, including electronic switching), General acquired control of some 22 laboratories scattered from coast to coast when it took over Sylvania. The Sylvania Research Laboratories at Bayside, New York, are devoted to "pure research," and the nine laboratories of the Electronic Systems Division are engaged in highly advanced research and development projects for the armed services. The remainder are engaged essentially in product development work.

Recently a number of Wall Street analysts were invited to visit the Research Laboratories and the research scientists explained their principal projects. These include the development of electroluminescence (for both lighting and image


TREND OF UTILITY STOCK GROUPS
Year-End Prices
Month-End Prices
6 GAS PIPE LINES*
11 GAS DISTRIBUTORS*
10 "GROWTH" ELECTRIC UTILITIES**
29 ELECTRIC UTILITIES*
3 TELEPHONE*
100
90
80
70
60
50
45
40
35
30
25
20
15
10
9
8
7
1942 '43 '44 '45 '46 '47 '48 '49 '50 '51 '52 '53 '54 '55 '56 '57 '58 J F M A M J J A S O N D
1959
*Standard & Poor's Index
**PUF Index

display in which Sylvania is pioneering), spectrum research, extreme purification of metals, the new field of MASER, semiconductor materials, etc.

General's meteoric rise from revenues of $61 million in 1949 to about a billion dollars' revenues and manufacturing sales in 1959 is described in the September *Fortune*. Gross revenues of the system are now about 35 per cent utility and 65 per cent manufacturing, but net income is 54 per cent utility and 46 per cent manufacturing. This setup provides greater diversification and reduces the proportion of the business which is subject to regulation, although on the other hand it introduces new competitive and cyclical factors.

Telephone Companies Allowed Returns of 6½-6¾ Per Cent

THE telephone industry has been seeking rate increases during the past decade largely to offset the constant rise in wage rates—compensation to employees is a much larger proportion of revenues than with the electric utilities—as well as the increased cost of senior capital. Figures for the rate increases obtained by the entire telephone industry are not available, but data for the two largest systems, comprising about 90 per cent of the industry, are as follows:

	Millions	
	Bell System	*General Telephone**
1959 to date	$ 7**	$ 9
1958	87	14
1957	104	2
1956	43	5
1955	25	5
1954	57	5
1953	152	14
1952	168	10

*Includes moderate amounts related to adjustments in toll settlements with connecting companies.

**Not included is a $50 million decrease in long-distance rates which was ordered by the FCC, a small part of which may be passed on to independent telephone companies.

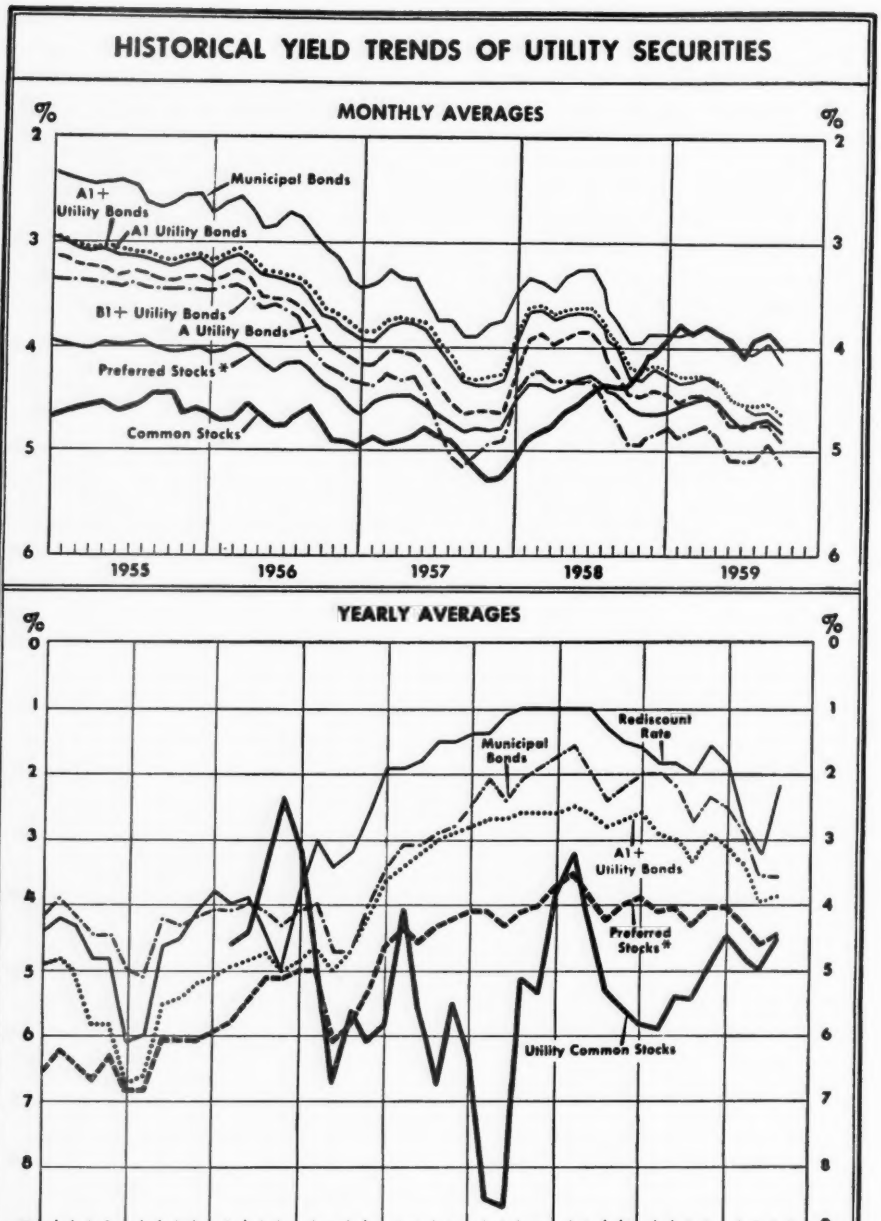
The Bell system has about $61 million of rate increase applications pending, but it appears somewhat doubtful whether any decisions will be forthcoming this year. General Telephone has about $9 million in increases pending.

WHILE it is always dangerous to generalize regarding rate matters, Bell has apparently obtained an average allowance of about 6½ per cent on original cost in rate decisions of recent years, while General has averaged perhaps 6¾ per cent. In California, for example, General Telephone's subsidiary was allowed a return of 7.1 per cent in the 1958 decision, .5 per cent being included for "attrition." It seems generally realized that General's cost of money is somewhat higher than American's, and it also operates in medium-sized communities and rural areas while Bell has many of the big cities.

Liberalized Depreciation—the Goodbody Study

TED LOCKE, public utility research specialist of Goodbody & Co., has issued two statistical studies on liberalized depreciation. He found that of 113 electric utilities, 25 companies are not using liberalized depreciation; of those who do, 24 are using the "flow-through" method and are carrying the tax benefits of liberalized depreciation through the income account to surplus. On the other hand, 46 companies are "normalizing" liberalized depreciation benefits to a reserve account; 10 are normalizing to restricted surplus; and 8 are normalizing to accumulated deferred taxes.

Regarding accelerated amortization, 25 out of 109 investigated are not using it; of those which are, 40 companies are normalizing the benefits to a reserve; 31 companies are normalizing to restricted sur-


HISTORICAL YIELD TRENDS OF UTILITY SECURITIES
MONTHLY AVERAGES
%
2
3
4
5
6
Municipal Bonds
Aa+ Utility Bonds
Aa Utility Bonds
Baa+ Utility Bonds
A Utility Bonds
Preferred Stocks*
Common Stocks
1955
1956
1957
1958
1959
YEARLY AVERAGES
0
1
2
3
4
5
6
7
8
9
Rediscount Rate
Municipal Bonds
Aa+ Utility Bonds
Preferred Stocks*
Utility Common Stocks
1915
1920
1925
1930
1935
1940
1945
1950
1955
1960
* Includes other preferred stocks in addition to utilities.
Standard & Poor's Index figures used

plus account, while 13 are normalizing to accumulated deferred taxes.

In the second study the effect on earnings and market value of the use of liberalized depreciation and accelerated amortization is studied (rapid growth utilities being omitted), and the results may be summarized for 83 companies as shown in table below.

Mr. Locke stated:

> Apparently the market is not yet making much, if any, distinction between companies using liberalized depreciation and those not using it at all, nor is there any important difference in market appraisal within the various groups which do use liberalized depreciation, except Group 5, for which there seems no particular explanation. The flow-through group sells slightly above the largest normalizing group, but the premium is insignificant, and we doubt that it will increase. On the contrary, the market may gradually assign a somewhat higher price-earnings ratio to the normalizing companies, as investors become increasingly aware of the unrevealed earnings existing under the normalizing method.
>
> Where the stock of a company with large per share amounts of normalization is available at the same price as a stock using the flow-through method, then (other factors being equal) preference would seem to go to the normalizing company. This conclusion appears warranted because the normalizing company has unrevealed earnings represented by the amount it is currently normalizing, whereas the benefits of the flow-through method are already being reflected in reported earnings.

WE surmise that the answer to the puzzle may lie in the fact that, while the amount of tax deferrals (where allowed to flow through to income) is in theory not considered available for dividends, nevertheless in effect it seems to be so regarded. Thus we find that the last three groups in the table (which normalized) paid out an average of about 68 per cent of earnings in dividends, during the twelve months covered by the Goodbody study, whereas the second group (which used flow through) paid out 79 per cent of earnings *if the latter had been adjusted for normalization.*

Since the rapid growth companies were eliminated from the study, the 83 stocks in the table were probably valued principally for yield. The group using flow through had an average yield of 4.20 per cent, whereas a weighted average of the three groups using normalization works out at about 4.29 per cent.

While these figures are fairly close, it would seem more logical if the average yield were smaller for the companies which normalize, since the dividends would be somewhat safer. Possibly investors ignore this, but on the other hand give some recognition to the fact that flow

	No. Of Cos.	*Aver. Market Price 7/10/59*	*Aver. Indic. Divd.*	*Aver. Yield*	*Average Price-earnings Ratio* As Reported*	*Adj. for Normalization*	*Adj. for Flow Through*
Not Using Liberalized Depreciation ...	18	32½	$1.32	4.07%	15.97	15.97	N.A.
Using Flow-through Method	20	38½	1.61	4.20	16.07	18.75	16.07
Normalizing to a Reserve	35	37	1.59	4.32	15.80	15.80	14.06
Normalizing to a Restricted Reserve .	5	35½	1.56	4.41	15.53	15.53	14.00
Normalizing to Accum. Deferred Taxes	5	34	1.36	4.00	16.75	16.75	15.04

*Using estimated 1959 share earnings.
N.A. Not available.

through in itself introduces a small growth factor in share earnings—since the amount of tax deferrals increases almost automatically each year with a resulting moderate increase in share earnings; and this would tend to indicate the greater possibility of future dividend increases, all other factors being equal.

The 100 Largest Nonfinancial Corporations

THE First National City Bank Letter for September tabulates the 100 largest nonfinancial corporations, based on 1958 revenues. The list included four utilities: American Telephone and Telegraph, General Telephone & Electronics, Consolidated Edison of New York, and Pacific Gas and Electric. (A fifth, International Telephone & Telegraph, was included among the manufacturing companies.) The 100 companies had aggregate sales or revenues of $142 billion in 1958; of this amount the utilities contributed $9 billion.

The average company in this group has invested some $21,000 per employee in plant, etc.—the largest amount being $98,000 for the electric and gas utilities, compared with as low as $7,000 for aircraft manufacturers. The railroads invested $38,000 and the telephone systems $32,000.

The 100 largest companies reported 10.2 million registered shareholders, the Bell telephone system alone having 1,625,000. More shareholders than employees were reported by 62 per cent of the companies; of course many employees are also stockholders.

FEDERAL and other income taxes paid by the hundred companies totaled $5.9 billion while miscellaneous taxes aggregated $5.5 billion. Thus total direct taxes took about 8 cents out of every sales dollar. (They take a toll of some 24 cents out of the electric utility dollar.) Net profit was considerably less than taxes—an average of 5.6 cents per dollar. Preferred and common dividends combined amounted to 3.6 cents, and about 2 cents was left to be reinvested in the business.

FINANCIAL DATA OF ELECTRIC UTILITY STOCKS

Annual Rev. (Mill.)			*9/23/59 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earns.*	*% Increase*	*Aver. Incr. In Sh. Earns. 1953-58*	*Price-Earn. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
$297	S	American Elec. Power	46	$1.68	3.7%	$2.36Jy	4%	7%	19.5	71%	33%
57	O	Arizona Pub. Serv.	33	1.20	3.6	*1.72Je	D8	9	*19.2	70	28
12	O	Arkansas Mo. Power	20	1.00m	5.0	1.32Je	D7	2	15.2	76	32
36	S	Atlantic City Elec.	48	1.50	3.1	2.07Jy	15	8	23.2	72	30
153	S	Baltimore Gas & Elec.	50	2.00	4.0	2.75Je	25	7	18.2	73	41
7	O	Bangor Hydro-Elec.	40	2.00	5.0	2.90Je	40	5	13.8	69	33
6	O	Black Hills P. & L.	29	1.44	5.0	2.39Jy	6	4	12.1	60	32
109	S	Boston Edison	60	3.00	5.0	3.64Je	NC	4	16.5	82	43
27	A	Calif. Elec. Power	19	.80	4.2	*1.15Je	22	5	*16.5	70	35
23	O	Calif. Oreg. Power	34	1.60	4.7	1.93My	1	3	17.6	83	37
9	O	Calif. Pac. Util.	34	1.60	4.7	2.51Jy**	10	15	13.5	64	31
70	S	Carolina P. & L.	34	1.32	3.9	2.07Au	3	5	16.4	64	42
32	S	Cent. Hudson G. & E.	19	.80	4.2	*1.34Je	2	5	*14.2	60	36
23	O	Cent. Ill. E. & G.	34	1.44	4.2	2.12Jy	6	11	16.0	68	43
39	S	Cent. Ill. Light	32	1.52	4.8	2.20Au	8	8	14.5	70	33
55	S	Cent. Ill. P. S.	39	1.76	4.5	2.63Je	3	13	14.8	67	35
17	O	Cent. Louisiana Elec.	41	1.80	4.4	2.08Je	D7	7	19.7	87	30
39	O	Cent. Maine Power	24	1.40	5.8	*1.64Au	D9	4	*14.6	85	33
147	S	Cent. & South West	58	1.80	3.1	2.70Je	10	8	21.5	67	38
12	O	Cent. Vermont P. S.	19	1.08	5.7	*1.35Jy	14	5	*14.1	80	35

Annual Rev. (Mill.)		(Continued)	9/23/59 Price About	Dividend Rate	Approx. Yield	Recent Share Earns.	% Increase	Aver. Incr. In Sh. Earns. 1953-58	Price-Earn. Ratio	Div. Payout	Approx Common Stock Equity
128	S	Cincinnati G. & E.	32	1.50	4.7	1.79Je	D12	3	17.7	84	43
8	O	Citizens Util. "B"†	13	.53	4.1	.67Je	8	6	19.4	79	48
119	S	Cleve. Elec. Illum.	49	1.80	3.7	2.80Je	8	5	17.5	64	45
6	O	Colo.-Cent. Power	24	.75	3.1	1.08Je	15	6	22.2	69	39
46	S	Columbus & S. O. E.	37	1.60	4.3	2.12Jy	D3	—	17.5	75	30
405	S	Commonwealth Ed.	58	2.00h	5.7h	3.67Jy	26	7	15.8	54	43
14	A	Community Pub. Serv.	21	1.00	4.8	1.37Je	3	5	15.3	73	46
78	O	Conn. Lt. & Pr.	22	1.10	5.0	*1.34Au	—	5	*16.4	82	39
582	S	Consol. Edison	61	2.80	4.6	*3.90Je	7	5	*15.6	70	38
228	S	Consumers Power	54	2.60	4.1	3.46Jy	7	1	15.6	75	38
83	S	Dayton P. L.	51	2.40	4.7	3.23Je	D4	4	15.8	74	40
50	S	Delaware P. & L.	57	2.10	3.7	3.10Je	10	9	18.4	68	33
246	S	Detroit Edison	44	2.00	4.5	2.35Au	—	3	18.7	85	47
145	A	Duke Power	47	1.40i	3.0	2.12Je	6	9	22.2	66	46
99	S	Duquesne Light	22	1.10	5.0	*1.39Je	D3	5	*15.8	79	34
33	O	East. Util. Assoc.	40	2.20	5.5	2.92Jy	10	3	13.7	75	34
3	O	Edison Sault Elec.	19	.90	4.7	1.31My	12	10	14.5	69	34
16	O	El Paso Elec.	34	1.16	3.4	1.57Jy	4	8	21.7	74	37
12	S	Empire Dist. Elec.	27	1.36	5.0	1.75Je	23	3	15.4	78	33
57	S	Florida Power Corp.	27	.72	2.7	1.08Je	D6	15	25.0	67	35
145	S	Florida P. & L.	47	.88	1.9	1.86Je	14	18	25.3	47	42
4	O	Florida Pub. Utils.	19	.72	3.8	1.16Je	D3	3	16.4	62	31
213	S	General Pub. Util.	24	1.12	4.7	*1.62Je	5	5	*14.8	69	40
7	O	Green Mt. Power	19	1.10	5.8	1.33Je	4	10	14.3	83	37
70	S	Gulf States Util.	28	.90	3.2	1.26Je	14	7	22.2	71	37
51	A	Hartford Elec.	62	3.00	4.8	*3.70Je	D1	2	*16.8	81	40
25	O	Hawaiian Elec.	52	2.50	4.8	3.23Je**	15	6	16.1	77	34
94	S	Houston L. & P.	67	1.60	2.4	2.92Au	D1	8	22.9	55	41
30	S	Idaho Power	46	1.70	3.7	2.21Jy	D8	9	20.8	77	33
92	S	Illinois Power	38	1.50	3.9	2.44Jy	20	7	15.6	61	37
49	S	Indianapolis P. & L.	40	1.70	4.2	2.31Je	8	7	17.3	74	35
31	S	Interstate Power	18	.90	5.0	1.17Je	6	4	15.4	73	32
37	S	Iowa Elec. L. & P.	32	1.60	5.0	2.18Jy	4	5	14.7	73	40
44	S	Iowa-Ill. G. & E.	37	1.80c	4.9	2.35Je	D9	—	15.7	77	43
41	S	Iowa P. & L.	36	1.60	4.4	2.07Je	4	1	17.4	77	34
35	O	Iowa Pub. Ser.	17	.80	4.7	1.24Au	10	3	13.7	65	32
15	O	Iowa Southern Util.	27	1.36	5.0	2.16Jy	10	4	12.5	63	40
61	S	Kansas City P. & L.	48	2.20	4.6	2.97Jy	D3	5	16.2	74	38
33	S	Kansas G. & E.	45	1.48	3.3	2.70Au	11	8	16.7	55	31
50	S	Kansas P. & L.	31	1.36	4.4	2.17Je	10	9	14.3	63	34
43	O	Kentucky Util.	32	1.52	4.8	2.62Je	19	7	12.2	58	40
7	O	Lake Superior D. P.	25	1.20	4.8	1.65Je	2	2	15.2	73	41
122	S	Long Island Ltg.	33	1.30	4.0	*1.97Je	2	6	*16.7	66	34
61	S	Louisville G. & E.	39	1.30	3.3	2.30Je	6	6	17.0	57	42
11	O	Madison G. & E.	49	1.80	3.7	3.88Jy	NC	2	12.6	46	45
5	A	Maine Pub. Serv.	21	1.20	5.7	1.45Jy	3	6	14.5	83	40
7	O	Michigan G. & E.	73	1.70j	5.3	5.63Je	26	9	13.0	30	37
183	S	Middle South Util.	44	1.90	4.3	2.62Je	1	5	16.8	73	39
30	S	Minn. P. & L.	33	1.60	4.8	2.29Au	D3	3	14.4	70	33
3	O	Miss. Valley P. S.	30	1.40	4.7	2.30Jy	10	5	13.0	61	33
15	S	Missouri P. S.	18	.72f	6.0	.90Jy	D10	3	20.0	80	30
7	O	Missouri Util.	26	1.36	5.2	1.62Je	D4	—	16.0	84	30
44	S	Montana Power	24	.80	3.3	*1.43Je	12	9	*16.8	56	39
167	S	New England Elec.	20	1.08	5.4	1.31Je	12	1	15.3	82	36
46	O	New England G. & E.	22	1.10	5.0	1.73Au	14	6	12.7	64	41
98	S	N. Y. State E. & G.	53	2.30	4.3	*4.06Jy	14	9	*13.0	57	35
264	S	Niagara Mohawk Pr.	35	1.80	5.1	*2.07Je	D1	1	*16.9	87	28
92	O	Northern Ind. P. S.	48	2.00	4.2	2.95Je	D3	3	16.3	68	36
155	S	Northern Sts. Power	23	1.10	4.8	1.42Je	11	3	16.2	77	36
11	O	Northwestern P. S.	21	1.10	5.2	1.49Je	D6	2	14.1	74	32
138	S	Ohio Edison	58	2.64	4.6	3.83Au	8	3	15.1	69	40
54	S	Oklahoma G. & E.	29	1.00	3.4	1.49Au	5	9	19.5	67	31
26	O	Orange & Rockland Utils.	24	.90	3.8	*1.29De**	3	16	*18.6	70	27
17	O	Otter Tail Power	30	1.60	5.3	2.51Jy	11	1	12.0	64	30

Annual Rev. (Mill.)		(Continued)	9/23/59 Price About	Dividend Rate	Approx. Yield	Recent Share Earns.	% Increase	Aver. Incr. In Sh. Earns. 1953-58	Price-Earn. Ratio	Div. Payout	Approx. Common Stock Equity
535	S	Pacific G. & E.	60	2.60	4.3	3.78Je	NC	6	15.9	69	34
52	O	Pacific P. & L.	37	1.60	4.3	*2.20Je	NC	7	*16.8	73	30
131	S	Penn P. & L.	27	1.25	4.6	1.66Jy	7	5	16.3	75	34
248	S	Phila. Elec.	50	2.24	4.5	*2.80Je	4	3	*17.8	80	40
36	O	Portland Gen. Elec.	26	1.20	4.6	1.67Au	D10	7	15.6	72	37
72	S	Potomac Elec. Pr.	26	1.20	4.6	*1.45Je	D4	6	*18.0	83	37
97	S	Pub. Serv. of Colo.	49	1.90k	3.9	2.68Je	5	5	18.3	71	33
344	S	Pub. Serv. E. & G.	37	1.80	4.9	2.42Je	8	3	15.3	74	34
81	S	Pub. Serv. of Ind.	41	2.10	5.1	2.80Jy	—	4	14.6	75	33
32	O	Pub. Serv. of N. H.	18	1.00	5.6	1.25Au	—	6	14.4	80	36
15	O	Pub. Serv. of N. M.	31	.90	2.9	1.53Je	25	13	20.2	59	34
27	S	Puget Sound P. & L.	34	1.44	4.2	*2.07Je	9	10	*16.4	70	39
65	S	Rochester G. & E.	43	1.80	4.2	*3.21Je	24	4	*13.4	56	37
9	S	St. Joseph L. & P.	31	1.50n	4.8	2.05Je	4	2	15.1	73	34
59	S	San Diego G. & E.	26	1.12	4.3	1.67Je	27	3	15.6	67	35
11	O	Savannah E. & P.	29	1.00	3.4	1.24Jy	D20	8	23.4	81	32
11	O	Sierra Pacific Pr.	33	1.40	4.2	2.18Jy	14	8	15.1	64	31
256	S	So. Calif. Edison	59	2.60	4.4	3.61Je	7	8	16.3	72	36
50	S	So. Carolina E. & G.	34	1.30	3.8	1.75Jy	—	11	19.4	74	33
7	O	Southern Colo. Pr.	18	.90	5.0	1.46My	3	4	12.3	62	36
272	S	Southern Co.	37	1.30	3.5	1.87Au	7	7	19.8	70	34
20	S	So. Indiana G. & E.	33	1.60	4.8	2.43Je	D1	3	13.6	66	35
8	O	So. Nevada Power	24	1.10	4.6	1.73Jy	35	6	13.9	64	46
3	O	Southwestern E. S.	16	.64	4.0	.98Jy	5	5	16.3	65	27
44	S	Southwestern P. S.	41	1.56	3.8	1.96Jy	13	3	20.9	79	36
32	A	Tampa Elec.	49	1.20	2.5	1.79Je	7	9	27.4	67	33
168	S	Texas Utils.	68	1.76	2.6	2.85Jy	8	11	23.9	62	41
42	S	Toledo Edison	16	.70	4.4	1.17Je	14	4	13.7	60	31
17	O	Tucson G. E. L. & P.	24	.76	3.2	1.00Je	D15	9	24.0	76	47
132	S	Union Elec. of Mo.	31	1.64	5.3	*1.77De	5	6	*17.5	93	32
36	O	United Illum.	27	1.38	5.1	1.62Je	5	3	16.7	85	50
6	O	Upper Peninsula Pr.	30	1.60	5.3	1.73Je	13	2	17.3	92	32
45	S	Utah Power & Light	33	1.32	4.0	1.84Au	5	6	17.9	72	44
140	S	Virginia E. & P.	35	1.10	3.1	1.61Jy	—	13	21.7	68	40
31	S	Wash. Water Pr.	44	2.00	4.5	*2.73Au	21	6	*16.1	73	32
142	S	West Penn Elec.	35	1.60	4.6	2.36Jy	7	6	14.8	68	32
77	O	West Penn Power	60	2.40	4.0	3.48Je	6	6	17.2	69	38
12	O	Western Lt. & Tel.	39	2.00	5.1	3.13Jy	11	2	12.5	64	41
28	O	Western Mass. Cos.	26	1.20	4.6	1.68Jy	3	10	15.5	71	50
119	S	Wisc. Elec. Pr. (Cons.)	36	1.60	4.4	2.59Je	17	1	13.9	62	40
44	O	Wisconsin P. & L.	32	1.48	4.6	2.19Je	14	3	14.6	68	37
43	S	Wisconsin P. S.	25	1.20	4.8	1.86Au	10	3	13.4	65	37
		Averages			4.4%		6%	6%	16.7	70%	
		Foreign Companies									
215	S	Amer. & Foreign Pr.	10½	$1.00	9.5%	$1.92Ma	D9%	—	5.5	52%	57%
129	A	Brazilian Traction	5	.25	5.0	.64De	D58	—	7.8	39	76
83	A	British Col. Pr.	36	1.40	3.9	1.95De	D16	7%	18.5	72	28
20	O	Calgary Power	90	2.00	2.2	4.46De	11	18	20.2	45	31
19	A	Gatineau Power	36	1.50	4.2	2.55De	7	9	14.1	59	35
49	O	Mexican L. & P.	15	1.00b	6.7	1.66De	D16	—	9.0	60	41
15	A	Quebec Power	37	1.60	4.3	2.34De	8	10	15.8	68	53
71	A	Shawinigan Water & Pr.	31	.68	2.2	1.60De	5	23	19.4	43	38

*Deferred taxes resulting from liberalized depreciation are not normalized. If they had been normalized the price-earnings ratio would be higher. **On average shares. †Stock dividends (only) are paid on the "A" shares. D—Decrease. NC—Not comparable. A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. b—Also 5 per cent stock dividend May 1, 1959. c—Also 5 per cent stock dividend June 10, 1959. f—Also stock dividend of one-half per cent quarterly. h—Also 2½ per cent stock dividend December 1, 1959, included in the yield. i—Also 15 per cent stock dividend January 29, 1959. j—Also 3 per cent stock dividend (paid each year end) included in the yield. k—Also 5 per cent stock dividend payable February 20, 1959. m—Also 5 per cent stock dividend June 15, 1959. n—Also 10 per cent stock dividend November 20, 1959.

What Others Think

The Rôle of Wages and Valuation in Telephone Utility Regulation

To an amateur economist there might seem to be unnecessary confusion in discussions of original *versus* reproduction costs in determining rate bases for the regulation of public utility rates. The same thinking prevails when depreciation theories are discussed. In like manner, discussions of original *versus* reproduction unnecessarily confused.

Both in determining depreciation methods, in formulating rate bases, and in establishing wage rates the confusion appears to arise from a lack of thinking in fundamental terms. Too many people think and write of money as actually being capital, rather than as the medium of exchange at the moment and a convenient means of measuring relative amounts of material goods. Too many people think and write of money as being profits, wages, depreciation charges, prices, etc., rather than as a means of expressing the value, volume, or relationship of these elements of business.

For example, the United Steel Workers are quoted in the press as claiming profits are "too high." What they mean is "you could hold prices at present levels and increase our wages by reducing profits a like amount." They seem to forget that "too high" in terms of money is relative. Too high for what? Too high for whom? They seem to imply they want more money for themselves to spend, or save now and spend later. If what they suggest were done, the inevitable result would be constant inflation. For with more money they will be willing to spend more of it for a given article. Hence the value of money in terms of material becomes less. And with profits in terms of money less, the owner or stockholder (who may be a union member) has less money to buy more capital with from his profits. The business must then borrow money on credit to buy capital, which is more costly than using retained earnings (that is, profits not paid out as dividends). So, prices must increase, and we have another inflationary push and we are back full cycle. All because people think of money as being something tangible rather than as merely a medium of exchange—a device to represent specific amounts of material goods or services at a given time.

In utility rate regulation a similar misuse of money arises. Some regulatory bodies say, "We can allow you to earn only on the money people have invested with you." They seem to want a utility to earn only on the capital they have in

terms of past money. They do not seem to consider the current value of the capital itself that the money bought when it was used as a medium of exchange at the time of investment. This is familiarly called the original cost theory of determining rate bases.

The utilities counter with the following argument. They say, "The original cost theory is fair *if* you can get the same amount of capital, of material goods, for the same amount of money at all times. But this doesn't happen. Capital—wire, cable, poles, buildings—costs us more money now. It takes a certain amount of capital plant to serve a customer. He should pay for using that plant. If we have to invest in a new pole for him, because he used up the old one, he should pay a rate that will enable the owner to buy a new pole at the current, higher prices, and still have a reasonable rate of return or profit in terms of current money. Therefore our rate base, our capital, should be based on current prices, on current money values for like capital." This is the reproduction cost theory of determining rate bases.

Of course there are the middle-of-the-roaders on both sides who hope to resolve this difference in theory by compromise. Either as regulators helping the public get good service by helping the utility fight inflation, or on the utility side trying to run a sound financial business to serve the public well for the long term in the face of inflation, they seek to achieve a balance between these two diametrically opposed theories. They say, "Let's recognize there is validity in both theories and use both. Let's use 65 per cent of one and 35 per cent of the other, because that's the relationship of our equity and debt capital in terms of the source of money we used to buy capital." (See *Business Week*, July 18, 1959, page 47.) This compromise, or one like it, is called the fair value theory of determining a rate base.

But to whom is it fair? Is it fair to the customers? All this time he has been crying, "Your rates are too high." Meaning of course that he wishes he had to give the utility less money for its services, regardless of their worth to him, which is difficult to calculate, so that he could have more of his money to spend on something else.

But, is it fair to base his rates on a valuation of capital that is a judicial compromise in which he has little direct voice? Is it fair to the worker to base his wages, his portion of operating expenses, on the owners' profits which in turn are based on compromise valuation of capital? Is it fair to the owner to limit his return on his investment by arriving at a compromise value of his capital rather than its true value?

The "fair value" theory is not really fair to anyone if we look at it in this light. As in any compromise, no one is treated fairly, but everyone is treated equally unfairly.

Should not everyone, owner, worker, and customer, pay or be paid in money for the service they get or the service they give, in relation to what the service actually costs or to what they could get elsewhere for the same contribution?

Disregarding such intangible factors as seniority benefits, pension "equity," etc., workers could theoretically work anywhere. Their wages should therefore be based on what they would get for the same effort and skills in other businesses in the same locale. They should be paid for what they do regardless of the owner's level of profits or the financial intricacies of rate base determination. Their

treatment should be based on wage surveys and fringe benefit practices of the locality they work in, as determined by joint worker-management action; *i.e.*, by "collective bargaining."

In like manner, the owners should get reasonable profits considering what they would get if they had invested in other businesses, with proper consideration of the relative risks involved.

The third leg of our proverbial three-legged stool, the customer, should pay rates which: (1) cover all operating expenses, including wages and the complete replacement of the physical capital consumed in giving him service; and (2) also provide reasonable profits for the owners. This is eminently fair for all concerned.

Now in order to determine accurately both these rates, the customers' rate of charge and the owners' rate of return, it is self-evident, I believe, that we must first determine what the owners' capital really is. Is it money, or is it the physical property the money bought at the time of investment? Favoring the latter view is the fact that what the customer uses, what made the enterprise possible, should be controlling. The money was simply an easy way of obtaining the actual physical capital; it was simply the medium of exchanging title to that property.

To use an extremely simple case, let us use the item of poles. Ten years ago, $100 would pay for three telephone poles in place, ready to render service. Today $100 will buy only two poles in place. If the owner invested $100 ten years ago, he literally owned three poles. It is the same as if he actually furnished the poles, as some rural subscribers do to avoid excess construction costs. Obviously, it is much more practical to use money for the great majority of capital investments. But fundamentally the fact remains the owner furnishes poles and the customer uses poles, or some other capital property.

Since the customer uses the poles until their life is exhausted, the owner charges him for that use and also for replacing used-up poles with new ones. The first part of that charge, the "rental" part, is really what comes to the owner as profits after all expenses are paid. Profits are his payment for risking his money in poles when he could have risked it in some other asset of another company.

In effect the owner says, "I want 25 cents per month rent every month you use my pole. And, of course, I still retain title to three poles." He bases the "rental" on his estimates of what he could have done elsewhere with the same capital investment.

The customer says, "I shall gladly pay all your operating expenses, including replacement of exhausted property, and shall also pay the return you ask for using your property."

To leave our simple example for a minute, it follows then that this portion of the customer's rate, the "rented" part that gives the owner his return, should be based on the original cost of the investment. That is to say, the rate base for determining rate of return should be on an original cost basis. No other position is tenable, since it is not logical to ask the customer to pay rent for something the owner did not provide. We must also use original cost in order to set the "reasonableness" of the owner's rate of return. Only in this way can we determine what the owner would have received if he had invested the same amount of capital money in another business at that time. And thus, bearing in mind the relative risks involved, we can establish by judicious investigation what his rate of return on his

original investment in the utility should be.

But if we do use original cost for the rate base, how will we compensate the owner for the effects of inflation? How will we maintain his property rights intact?

To go back to our example, how can we guarantee the owner he will always own three poles when we can only buy two replacing poles with the same amount of money he originally furnished? The customer has said he will pay all operating expenses, "including the cost of any plant I use up." But if we recover only $100 from him, as the years go by, the owner will only have two poles, to replace the three he furnished. That is to say, his capital has been diminished in value by the inflation of money. He or someone else must furnish additional money just to keep the business going.

THIS attrition of capital is the result of the unsuitability of a managed monetary unit of changing purchasing power to serve as a medium of expressing, over a period of time, a man's capital worth, his wealth.

To carry our little example to a conclusion, continuing inflation would mean the owner would eventually have no capital property left at all. As a side problem, management would continually face, as it does now, the task of raising new additional capital money just to keep the owner's capital property rights intact.

The answer to these problems lies in that operating expense known as depreciation charges. These charges should be based on the reproduction cost of plant in place rather than on its average original cost as at present.

How can this be done? How can we keep the owner's capital intact through depreciation charging? The present practice in most utility accounting is to establish retirement units, such as groups of similar items like poles of a particular class and height. The life of these units is then calculated by the engineers using past life data, etc. Then, as units are retired, the remaining life of those units not yet retired is determined. The original cost of the units in service is calculated on an average basis. This is an average original cost since the costs are adjusted as new units are added and old ones are retired. The result of the averaging is the depreciable plant or money value of existing plant at its average original cost as it was acquired.

By actuarial analysis, the monthly charges are then determined from the estimated life and average original cost, usually on a straight-line basis.

THE proposed practice would differ from this only in that the cost used to determine the cost of plant in service would be the latest cost incurred in acquiring the latest units of that type. That is, the reproduction cost. This cost would be calculated against the remaining life of all plant in service regardless of its cost when placed in service, to establish the money value of existing plant. This, in fact, *is* its value in terms of current money.

And this is what the customer should pay as an operating expense for using up capital plant.

These charges, of course, are placed on the balance sheet in the depreciation reserve. When a plant unit is actually retired its original cost is usually deducted from this account plus the cost of removal less salvage, if any. There is no reason for any change in this procedure. Naturally, then, the depreciation reserve will get larger as inflation occurs. It should. It should get larger by the amount of the in-

flation cost. And by the procedure suggested above it will do just this.

Now suppose we should happily go through a period of deflation. Just the reverse will happen. The customer will be charged depreciation only on the basis of replacing plant at current costs. He will not be charged excessively by replacing old inflated money with new deflated money. He will be charged for the actual physical plant at current costs in money.

We submit that present depreciation practices are fair to the owner and customers only during periods when prices fluctuate above and below a norm. During periods of ever-increasing inflation, the average original costs never catch up with current costs. Like the hare, they never quite catch the turtle. But a depreciation practice based on reproduction costs would be fair to all, since it is based on the current money value of the physical plant in service.

In summation, it is suggested that the three legs of our stool will be treated fairly when:

1. Labor is paid wages comparable to what they would get in other businesses in the area for similar productivity, effort, and skill.

2. Owners are paid a reasonable rate of return on their original investment. Reasonable, that is, considering what they would receive if they had made the same investment at that time in other businesses, taking into account the relative risks involved.

3. The customer pays rates which give labor fair wages, owners a reasonable return on their investment, and which guarantee the owners, at the same time, that their property will be replaced as it is used up in service without the need for additional capital.

This can be done through collective bargaining for wages, by using original costs in establishing rate bases and reproduction costs in determining depreciation charges.

—R. R. V.

The Future of Independent Telephony

The continued public demand for telephone service, along with the awakening of the telephone companies to the fact that they are in direct competition with other services and products for the consumer dollar, has created an ever-mounting problem for most companies. Not only does the demand for new capital continue but it increases as more facilities are required and the demands of the public for the latest developments in telephony increase. This demand for change by the public is stimulated by national and news releases by the Bell system and independent manufacturers along with the merchandising efforts of the operating telephone companies themselves.

From the public standpoint this is good for it has forced operating companies to realize that they do not have the monopoly they thought they had. As pointed out previously, operating companies now realize they are in competition for the consumer dollar, which means that they not only have to attract interest, but they must give the consumer value for his dollar if the service is not going to be priced out of the market.

In addition, the operating company must produce a sufficient rate of return on invested capital to continue to attract new capital. A failure on the part

of the operating company in either or both of these will result in its falling by the wayside.

Management of most operating companies has met this dual challenge head on, with the result that better management is continuously developing within the industry.

Not only top management but employees are becoming far more cost conscious. It is also realized that in becoming more cost conscious service to the public must continue to improve for public relations today has become vitally important.

Any operating company to continue to be successful must at all times have the public on its side. Each company must be considered by the public to be a good citizen of the community or communities it serves. This means its management and employees must take an active part in community affairs.

IN addition to being cost and community conscious, the operating company must be continuously on the lookout for new means of increasing its revenues. This is not a case of grabbing every new gadget or service that comes along and trying to force it on the customers. Careful study and survey must be made to determine whether or not the gadget or service fills a need or desire of the community and if the community is willing to pay a price that will give the company a fair return on its investment.

NEW methods of operating also require careful study to be sure savings and better service will be the result.

In some cases the construction of your own toll lines within the territory served will prove a means of additional revenue, but, here again, careful study is required.

Some of the smaller companies do not have the personnel to make the studies required. Their best bet may be to combine with other companies. This may not only help them in other respects but increase their purchasing power to a point where better prices may be available.

The future for the independent telephone companies is bright, only where management improves itself to meet the challenges.

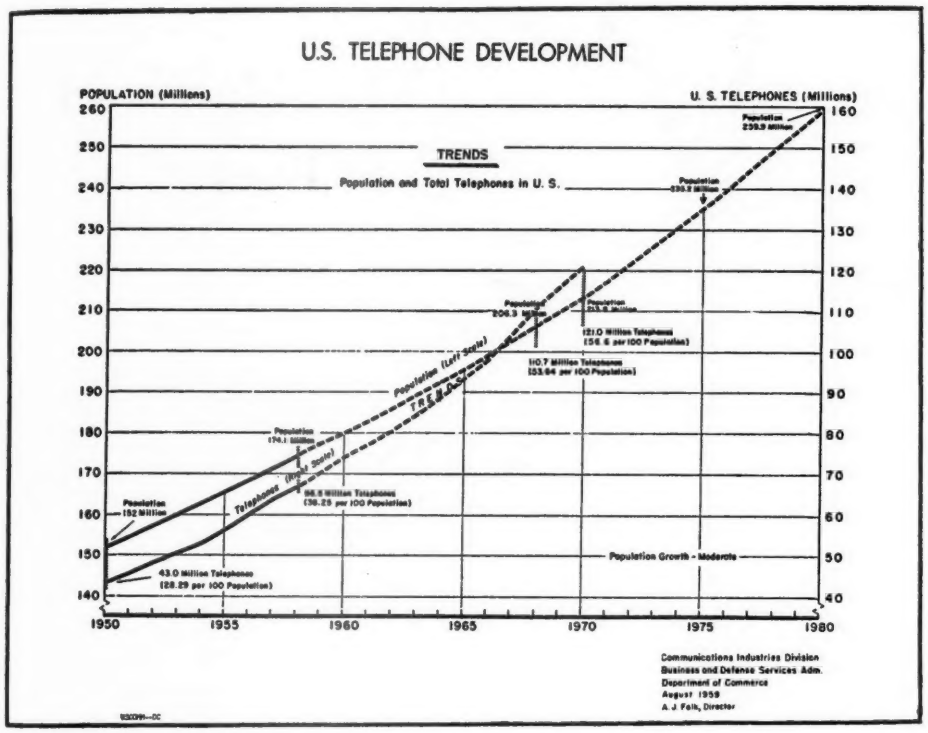
—W. S. KINGMAN,
Executive vice president,
Chenango and Unodillo
Telephone Corporation,
Norwich, New York.

Telephone Industry Shows Big Growth

THE telephone industry is expanding at a rate that would put approximately 121 million telephones in service in the United States in 1970—or about 50 million more than at present—the Communications Industries Division, Business and Defense Services Administration, U. S. Department of Commerce, said in a recent study. This study is one of a series being made by BDSA to assist industry in programing.

The division forecast, based on what is considered a moderate estimate of the country's population growth, business expansion, new homes, rebuilt housing, and new families, puts the prospective 1970 level at double that for 1956.

The telephone density trend in the United States indicates that in 1970 there will be approximately 56.6 telephones per one hundred population, compared with roughly 39 telephones per one hundred population in service at the end of 1958. From January, 1951, to December, 1958,



the number of telephones in the nation increased from 43.0 million to 66.6 million.

In spite of the business slowdown during 1958, there were approximately 3 million telephones added to the nation's total, a number slightly greater than the total population growth of the country.

Estimates for 1959, including results thus far, indicate that the number of new telephones to be placed in service will exceed population growth of the country by more than 500,000, giving the nation more than 70.5 million telephones by the end of the year. The telephone growth rate this year approximates 5.5 per cent as compared with an annual population growth of 1.6 per cent.

TECHNOLOGICAL improvements and the broadened services and facilities the industry offers have placed the telephone within reach of the entire business and social community, thus increasing importance to the user, all of which contributed correspondingly to continuous healthy expansion, the BDSA Communications Division says.

The accompanying chart illustrates the trends on which the division study is based.

The March of Events

World Atomic Agency Accord

JOHN A. MCCONE, head of the Atomic Energy Commission, reports that full agreement has been reached between the United States and the Soviet Union to support the East-West International Atomic Energy Agency in its efforts to promote the peaceful use of atomic energy.

McCone declared that his recent Washington talks on mutual exchange of non-military information with his Russian opposite number, V. S. Emelyanov, led to the understanding that the IAEA agency "is becoming a useful instrument and that its activities should be expanded."

One practical result, the AEC chairman said, is to step up the exchange of American and Soviet nuclear scientists. McCone is presently representing the United States as head of the American delegation to the third annual IAEA general conference in Vienna.

FPC Sets Fiscal Record

THE Federal Power Commission has approved the construction of a record $763 million of natural gas transmission facilities in the fiscal year ended last June 30th.

The total, according to an agency report, topped the previous record of $725.4 million authorized in fiscal 1951. A major factor underlying the fiscal 1959 upsurge was Supreme Court support for the FPC's rate-making procedures for pipeline companies.

The largest single authorization for 1959 was one that amounted to $169 million in construction. It went to Tennessee Gas Transmission Company, Houston, Texas. The company, which operates from Texas to New England, got approval to build 1,073 miles of pipeline and compressor stations capable of 104,250 horsepower.

Alabama

City Questions Gas Rate Petition

THE commission of Birmingham has asked the Alabama Public Service Commission if it is going to intervene in a hearing to be conducted on a gas rate increase for which the Southern Natural Gas Company has asked approval by the Federal Power Commission.

Attorney Mayer Newfield pointed out that the situation is more urgent than it was in 1958 when Southern Natural won increases totaling more than $11 million.

These boosts also resulted, he said, in Alabama Gas seeking approval of $4,675,000 in rate increases.

The increased rates now being asked by Southern Natural would bring in a total of $10,135,000 in additional revenue, Newfield said. This would make the average price of gas from 32.1 to 36.6 cents per thousand cubic feet, he declared.

In addition, Alabama Gas already has said it will ask the commission to grant a further increase of its rates to cover the greater cost of the gas it buys from Southern Natural.

Florida

Tariff Revisions Ordered

In July the Florida Railroad and Public Utilities Commission authorized Tampa Electric Company to increase its rates for electricity so as to produce $1,585,000 in additional annual gross revenue.

However, when the utility filed its proposed tariff changes with the commission, they were disapproved. The reason given was that the company was attempting to impose the entire increase on its residential and small commercial customers. The commission felt the increase should be spread more equitably among other classes of service.

Tampa Electric did not offer revised tariffs, but filed a petition for reconsideration, insisting the increase be imposed as it wished. Upon review, the commission ordered that the company either submit reliable cost-to-serve studies to enable the commission to determine the best way to impose the increase in rates or to go along with the findings of the commission on how the tariffs should be applied.

Gas Franchise Deferred

A gas utility franchise has been held up for the Houston Corporation by officials of the city of Miami, pending a ruling by the state on claims that the company charges consumers too much.

Officials will ask the city commission for a delay because of the increase in gas rates to minimum consumers. Under the old Florida Gas Company operation, the minimum rate was $1.10, but this rose to $2 when Houston Corporation took over. The new rate was approved by the Florida commission.

More than 40 per cent of Miami natural gas users would fall into the minimum rate class. Spokesmen for both the city and Houston Corporation agreed that the city has now power to control rates charged by the company, but the city has to approve Houston Corporation's operation in issuing a franchise.

Missouri

Finds Gas for 10,000 Homes

The development of a gas field in the Freeburg area has made it possible for the Illinois Power Company to promise natural gas for an additional 10,000 homes in the St. Clair-Madison county area this coming winter.

According to the company the new gas field consists of about 5,000 acres and contains an estimated six billion cubic feet of natural gas. This amount is sufficient to supply half of the company's demand for one heating season. When it is exhausted, the company will utilize the field as a storage area.

The 10,000 gas users who will benefit from the new supply are in the Belleville, East St. Louis, Edwardsville, and Litchfield areas, a company spokesman reported.

New York

ICC Approves Rail Loan

THE Interstate Commerce Commission has approved a federal guaranty of a $40 million loan for the New York Central Railroad.

This is the largest loan the ICC has agreed to underwrite since Congress passed legislation permitting such guaranties last year.

It brought to $45.5 million the total of loans the agency has approved thus far to assist the railroads. New York Central said it would use the proceeds and other funds to construct three large electronic train classification yards with centralized control and other equipment. The actual lenders of the funds will be eight large insurance companies which will charge 5 per cent interest. The loans are limited to 15-year terms.

Pennsylvania

Seeks Funds to Fight Utilities

PITTSBURGH City Solicitor David Stahl has asked the city council for $10,000 more funds to supplement his $25,000 budget to help fight rate increases by utility companies.

Stahl had this to say:

> Although it is impossible to measure exactly in dollars and cents the results of our protests against utility rate increases, it can be safely said that the total savings in suspended increases to city consumers this year alone are at least a half-million dollars.

In 1959 the city of Pittsburgh has presented arguments to the public utility commission opposing rate increases by Manufacturers Light & Heat Company, Peoples Natural Gas Company, Equitable Gas Company, and South Pittsburgh Water Company.

Gas Hike Sought

THE Equitable Gas Company of Pittsburgh has asked the state public utility commission for a rate increase amounting to $1,706,700. D. B. Beecher, president of the company, said this would cost residential heating customers about 36 cents a month more and nonheating customers about 11 cents additional each month.

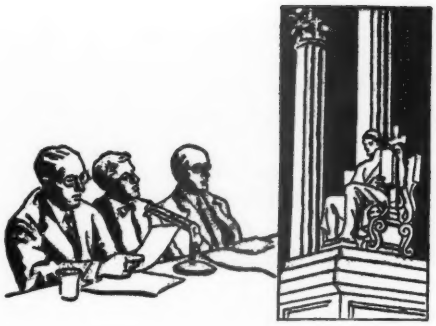
Equitable serves 239,000 customers in Allegheny and six other western Pennsylvania counties. The company president also said that the increase is necessary to meet the rise in prices charged Equitable by two of its major wholesale suppliers whose increased rates are now on file with the Federal Power Commission.

Texas

Fight City's Power

Two Texas utility companies have taken their fight against city-fixed rate scales to the federal district court. The Glen Oaks Utilities, Inc., and Greenfield Utilities Corporation have filed a petition for a temporary restraining order against the city of Houston's regulatory powers. The petition alleges that the companies' constitutional rights have been violated in that they were denied the due process of law in the city's enactment of a rate ordinance affecting their operations.

This action asks the federal court to enjoin the city of Houston from filing criminal charges against the two companies for failure to collect rates specified by city ordinance, or from fining the utilities.



Progress of Regulation

Trends and Topics

Attraction of Capital to Meet Service Demands

ATTRACTION of capital has long been recognized as an important factor in fixing a fair rate of return, since utility companies must compete in the money markets to obtain funds needed for expansion of facilities to provide service. Numerous opinions on this subject are discussed in *"Rate of Return,"* by Ellsworth Nichols, at page 70. Even when there is no present need for new capital, this is a factor to be considered, according to a Wisconsin supreme court ruling in a case involving the Wisconsin Telephone Company during depression years (30 PUR NS 65, 287 NW 122), reviewed in *"Rate of Return"* at page 94.

Financing Construction Program

Now there is a real need for expansion and improvement of facilities. Rapid development of suburban areas and, with respect to telephone companies, conversion to dial operation, require large amounts of new capital. An accelerated population growth was an important factor in the recent decision by the Washington commission in the West Coast Telephone Company case (29 PUR3d 308). The company needed new capital to accomplish an accelerated construction program to meet pressing service requirements. There was a need for a drastic reduction in the number of held orders for regrades and a compelling necessity for enlargement of various base rate areas. Earnings ranging from between 6.25 per cent and 6.50 per cent on total capital would maintain the company's credit and financial stability and enable it to raise requisite new capital.

The commission said that in order to enable the company to improve its financial structure and procure new capital for the program, a rate of return at the upper limits of the range was fair and reasonable. It was estimated that under the new rates the company would earn a return of 6.46 per cent.

Capital Required to Meet Customer Needs

The West Virginia commission, quoting the Supreme Court in the Hope case (51 PUR NS 193), approved the fundamental principle of rate regulation

that a utility has a constitutional right to a return which will insure its financial integrity so as to maintain its credit and attract capital. The commission then said that this is not only to protect the stockholders but also to make sure that the company can expand and provide for the needs of its customers (27 PUR3d 365).

The Illinois commission, in a rate proceeding involving Southwestern Bell Telephone Company (6 PUR3d 41), said that public utilities are entitled to such a return as will enable them to attract capital for the natural growth that they must have in order to provide the service demanded by the public. The Minnesota commission, in fixing rates for Northwestern Bell Telephone Company, considered the effect of a large-scale construction program (2 PUR3d 33).

The Virginia commission, in fixing rates for Chesapeake & Potomac Telephone Company of Virginia, took into consideration the company's program for eliminating certain toll charges for shorter distances and providing toll-free calling, or extended area service, between exchanges, which would necessitate substantial construction expenditures (21 PUR3d 239). The Florida commission, in determining the earnings requirement of a telephone company engaged in an extensive construction program, referred to the necessity of considering the fact that there were more stations in service at the end of the year and that permanent capital had increased per station because of the inflationary effect of the high cost of construction (17 PUR3d 126).

The Kentucky commission, in fixing rates for Southern Bell Telephone & Telegraph Company, said that it was unsound to reduce earnings to the level where expansion to meet service demands is curtailed. The commission must exercise a sound and wide discretion in allowing a return to permit the utility to raise capital for needed expansion. The return must be sufficient to insure investor confidence in order that the company may raise capital necessary to improve and expand its service in keeping with the public need (18 PUR3d 113).

The Connecticut commission, in fixing water rates, said that it could not ignore a major capital expansion program, found by the commission to be necessary. Its impact upon the attendant need for attracting capital required consideration of current investor requirements (2 PUR3d 452).

Limitations on Capital Attraction Theory

The South Dakota commission, in the Northwestern Bell Telephone Company case, said that a company should not expect to realize its usual rate of return during an immediate future period in which it undertakes an unusual construction program (23 PUR3d 321). An abnormal increase in plant was said to be a nonrecurring item which might distort the return showing until the increase in revenue-producing units could catch up. The same commission, in another case, said that the fact that the Rural Electrification Administration had advised a telephone company that unless it secured a rate increase it would not be given the additional loan funds necessary to complete a modernization project was not a controlling consideration (8 PUR3d 22).

The Virginia commission, in one case, seems to have accepted the Wisconsin commission view which was rejected by the state court, mentioned above. It said that evidence as to attraction of capital was irrelevant as to a bridge company which was gradually liquidating itself and which had no occasion to attract capital (19 PUR3d 1).

Review of Current Cases

Property Additions during Interim Rate Period Entitled to Consideration

THE Alabama supreme court placed the Southern Bell Telephone case on the rehearing docket for the limited purpose of discussing further what it had said in its original opinion, reversing and remanding a lower court judgment setting aside a commission order in a rate proceeding. Both the Alabama commission and the telephone company had petitioned the court to state more definitely what it had intended with respect to the remandment. For previous opinion see (1959) 26 PUR3d 400; for commission decision see (1954) 4 PUR3d 195.

Consideration of Future Needs

The court pointed out that the commission, in determining a fair net return on the reasonable value of a utility's property, must consider the utility's future or projected needs. The determination of such needs in the future more often than not will be based on estimates. If such estimates of needs are entitled to consideration, then surely actual experience during the period in which the rates are to be effective should be entitled to consideration.

Actual experience would certainly furnish better evidence of the utility's needs than an uncertain estimate.

The court pointed out that the problem on remand was how and to what extent changes in the company's property ownership during the five years that the increased rates had been in effect should be considered in arriving at the reasonable value of the property for rate-making purposes in the new hearing. Should the commission consider the property owned and used by the company in its business, and the reasonable value thereof, as of the time of filing the original petition for increased rates, and only such property and value, without regard to the actual property owned and used and the reasonable value thereof during the interim period? The court thought not.

Actual Requirements

If a utility at the time of a hearing on its petition for increased rates shows that the requirements of its business, in order to provide service, called for enlarging of plants, facilities, and equipment, evidence as to such requirement actually made or to be made is entitled to due consideration by the commission in determining the rates, the court said. In this case, where there had been a period of more than five years during which increased rates had been in effect, the actual requirements, as evidenced by what had actually occurred during the interim period, should be given due consideration.

Effective Date of Rates

It seemed to the court that the commis-

sion could properly make the rates operative from and after the time they actually had been in effect. If it be determined that an increase in rates is proper, said the court, the commission is empowered to provide a different increase for certain stated periods during the time from that date until the final order is made. During one period, there may be a proper basis for fixing rates different from those during another period due to a difference in factors which might bear on the rates from time to time. For instance, such factors might well vary sufficiently from time to time so as to justify a different rate for different periods of time. *Alabama Pub. Service Commission v. Southern Bell Teleph. & Teleg. Co. 113 So2d 503.*

Company's Right to Refuse Restoration of Service Preventive, Not Penal Measure

THE Pennsylvania commission ordered a telephone company to restore service to a customer whose phone had been disconnected by the company upon receipt of a letter from the chief of police stating that the customer's telephone was being used for gambling activities and requesting discontinuance. The company, without any inquiry or investigation, had promptly removed the telephone.

The commission pointed out that it was unnecessary to pass upon the alleged criminal nature of the conduct of the customer. Its primary concern was with the likelihood of future use of telephone service for illegal purposes. No such likelihood appeared in the instant case.

The commission made it clear that it viewed the refusal of restoration of service as a preventive measure to be utilized where there is a likelihood of further use for illegal purposes, not as a penal measure for punishment for past activities.

The evidence showed that the customer had been a bona fide operator of a gas service station for more than six years. A telephone was necessary for the conduct of his business. He had had no previous criminal record, and there was no evidence of the continuation, or of any intent to continue, the activities about which the criminal complaint had been lodged. There were no reasonable grounds for assuming that the customer would use the telephone service, if restored, for unlawful purposes. *Cuzzola v. General Teleph. Co. of Pennsylvania, Complaint Docket No. 17163, July 20, 1959.*

Telephone Service Properly Refused for Use in "Sports Publication" Business

JERSEY SPORTS PUBLICATION, proposing to conduct a business of selling selections of horse race winners and racing results, sustained a serious setback at the hands of New Jersey Bell Telephone Company and the New Jersey board. An application requesting the installation of 20 telephones for use in the proposed business was denied, and the board upheld the company when the applicant petitioned for an order to require the needed service.

According to the testimony of an admitted "handicapper," offered for the applicant, three selections of winners of horse races at local tracks would be provided by telephone, daily, to the applicant's customers for a charge of $10 a week. As an added service, at no cost, the applicant would provide racing results to the customers.

The company contended that the proposed business would be aiding and abetting illegal off-track wagering and that the furnishing of telephone service to the business would be in violation of law. Furthermore, the county prosecutor had requested the company to refuse service because of the unlawful nature of the undertaking. Under a tariff provision the company has a right to terminate or refuse service upon objection by any governmental authority.

On numerous occasions the board has upheld this tariff provision as reasonable where the company knows or reasonably believes that telephone service will be used illegally.

The state board must assume that the action of the county prosecutor in this proceeding was based on good motives and adequate facts, said the board, indicating that it would not pass upon the propriety of his action. *Re New Jersey Bell Teleph. Co. Docket No. 11263, July 31, 1959.*

Commission Rules on Payments to Affiliates and Cost of Capital in Granting Telephone Rate Increase

THE Washington commission granted a rate increase to General Telephone Company of the Northwest designed to yield a rate of return of approximately 6.5 per cent. The commission adheres to the principle previously stated that part of the income tax savings brought about through the filing of a consolidated income tax return should be credited in proper amount to the participating subsidiary company, but it found that in the instant case there was inadequate support in the record for the particular allocation proposed by the commission staff. Likewise the commission found no clear substitute allocations supported by the record. Accordingly, it deferred any adjustment at the time.

Affiliated Interests

The General Telephone Corporation owns 100 per cent of the stock in General Telephone Company of the Northwest. It also owns, through ownership of 78 per cent of stock of Associated Telephone & Telegraph Company, a number of manufacturing and sales companies which do business with a large number of United States and some foreign subsidiaries operating telephone companies. General Telephone Corporation also owns stock of both Leich Electric Company and Leich Sales Corporation, as well as of Electronic Secretary, Inc. It owns 78 per cent of Automatic Electric Sales Corporation because of the public interest in their direct parent, Associated Telephone & Telegraph Company. These manufacturing and sales subsidiaries do business with the operating company. Less than 42 per cent of the combined sales of General Telephone system manufacturing and sales companies are being made currently to the domestic telephone operating companies in the General Telephone system. The balance of sales are made on a highly competitive basis to nonaffiliated customers.

In view of these facts the commission said that the success or failure of the manufacturing and sales company is directly related to the same type of competitive and economic factors with which most other industrial concerns are constantly faced. Prices charged by Automatic Electric and Leich companies for goods and services must necessarily be competitive.

The telephone company contended that although it had furnished information as to return on average net investment, it was neither proper nor practical to meas-

ure the reasonableness of profits on the sales of any manufacturer or distributor by comparison with what might be considered to be a reasonable rate of return in the case of a regulated utility. Allocation of a portion of the average net investment of the affiliates to transactions involving the operating company results in an insignificant average net investment being assigned to the company in connection with equipment sales. The "impropriety of the return on average net investment is magnified in the case of competition relating to the supply and carrier sales" because they are manufactured by others and only distributed by Automatic Electric Sales Corporation and there is little investment required on the part of the distributors.

In the opinion of the commission, the reasonableness of charges by the affiliated companies for goods and services to General Telephone Company of the Northwest is more properly to be tested by the percentage of profit on sales than the percentage of average net investment. The evidence failed to disclose that prices paid to the affiliates were above those which were fair and reasonable. Moreover, the commission decided that General Telephone Directory Company provides a better directory service at lower cost than the operating company could provide for itself. The arrangement between the companies whereby the directory company sells and publishes directories was said to be fair and reasonable.

Rate Base

Investors, said the commission, should be allowed to earn on the funds which they have dedicated to the firm's operating use, but they should not be allowed to earn on funds which the ratepayers have provided. The staff found that supplied funds did exceed net investment and that operations were generating funds for use as working capital, with the result that it recommended a 1.35 per cent allowance for working capital. The commission adopted the staff's determination.

The commission approved a staff recommendation that the dollar amount of the plant acquisition adjustment arising from the purchase of Richland properties be excluded. The present record was said to be inadequate to support inclusion in the rate base of this particular plant acquisition adjustment.

The commission said it preferred to use its traditional method of determining rate base by computing the average of monthly averages of plant devoted to the public service instead of an end-of-period rate base.

Cost of Capital and Rate of Return

The commission gave extensive consideration to testimony as to the cost of capital and fair rate of return. The major problem was the determination of the cost rate of equity. The method of comparing earnings of a group of nontelephone utilities was disapproved.

There was some questioning as to the handling of embedded costs; *i.e.*, the unamortized costs of preferred stock previously called and no longer outstanding. The commission said that a witness did not include such embedded costs in the cost of preferred, but included them in using a lower pay-out and hence a higher cost rate of common equity. It was said that to include the embedded costs in the cost of preferred, and to use the cost rate of equity, would be sheer duplication. The commission, after analyzing the testimony as to cost of debt, preferred, and equity capital, concluded that a rate of return between 6.25 per cent and 6.50 per cent was fair.

Spread of Rates

There was said to be nothing in the

record to support the company's proposal to decrease rates for supplemental equipment, and the commission was of the belief that, with the exception of two items in that category which should be decreased to bring them in line with adjustments authorized in other categories, the same should be denied.

The company proposed to change its present method of a fixed and nonrecurring charge for colored telephones at time of installation to a recurring monthly rate. This proposal was disapproved. The company proposed that the monthly rate for local exchange service be based on a colored telephone with a discount of 25 cents per month for subscribers with black telephones. The commission said that while this policy might be desirable at some future date, it appeared to be premature at the time, as only a small percentage of the company's telephones presently in use were colored. Furthermore, the subscribers with colored telephones had paid the fixed charge.

The commission denied a proposed reduction for business telephone extensions associated with an increase for residence telephone extensions. There was said to be nothing in the record to show that the present business rates were excessive.

The company for many years has collected the same rates for four-party and rural service. It proposed that rural rates be 25 cents per month higher than four-party rates in the various station availability groups. The commission did not find any justification for making such a change at the time. *Washington Pub. Service Commission v. General Teleph. Co. of the Northwest, Cause No. U-9054, September 2, 1959.*

Service Complaints No Bar to Rate Increase

THE Ohio commission authorized a small telephone company to increase rates upon a showing that, after deduction of operating expenses, the company would earn a rate of return of 2.36 per cent, which was insufficient. The principal reason for seeking increased rates was the company's need for additional funds to make repairs and improvements to plant. It was also said that expenses had increased and it needed additional revenues so that wages might be increased and experienced employees retained.

The company had been hard hit by a flood and had not been able to meet all expenses incurred in having to rebuild some of its lines. It had agreed to grant a wage increase to employees, but was unable to make this increase effective because the present rates did not provide sufficient revenue. The proposed rates would result in an increase of about 35 per cent in charges for local service. The commission said this was a rather sizable increase but the company must receive additional revenues in order to continue furnishing service. The annual rate of return would be 4.60 per cent, which was not excessive.

Some subscribers opposing the rate increase made complaints as to deficiencies in service. The commission, however, referred to the fact that the state supreme court in the Elyria Telephone Company case (98 PUR NS 246) had held that the commission does not have authority to require that certain installations and improvements be made before the utility may claim and receive a just and reasonable rate for services actually being rendered with its existing property and facilities. This holding precluded the commission from conditioning the grant of a request for rate relief upon the making of improvements. *Re New Burlington Teleph.*

Co. No. 28,179, August 20, 1959.

The commission also granted a rate increase to another small telephone company upon a showing that present rates provided a return of only 2.50 per cent, which was not sufficient to yield reasonable compensation. The company had recently converted from magneto telephones and switchboards to common battery service. The basic reason for the application was that the company needed additional revenue to meet the annual charges for financing this improvement. The annual rate of return would be only 3.73 per cent. *Re New Knoxville Teleph. Co. No. 28,087, August 20, 1959.*

Telephone Rates Increased for Subscribers Switched at Another Company's Exchange

THE Wisconsin commission authorized the Rudolph Telephone Company to increase certain rates affecting only subscribers directly connected with the exchange of a neighboring telephone company.

Only 65 of the company's 510 subscribers were affected. Recently the commission had authorized the neighboring company to increase rates for switching service. The Rudolph Company merely requested permission to pass this increase on to its subscribers connected to that switchboard.

The commission said that the request was reasonable, assuming that the company's present earnings were not unreasonably high, because the increase in costs was directly allocable to the subscribers affected. The company's net operating revenue was found to result in a return of 5.03 per cent. This was not deemed excessive. The new rates would not affect net operating revenue and, therefore, would not produce a higher rate of return.

A question was raised by an objector as to the relative level of the applicant's and the adjoining company's rural rates. The commission said that although comparisons of rates are not considered meaningful since costs vary, such a comparison in this case would show that the proposed rural rate for residential service was 20 cents a month lower than that of the adjoining company. *Re Rudolph Teleph. Co. 2-U-5163, August 13, 1959.*

Order for Plan to Divest Telegraph Properties Must Consider Due Diligence and Feasibility

A FEDERAL appeals court set aside and remanded an order of the Federal Communications Commission of July 9, 1958, which required Western Union Telegraph Company to present a plan by December 31, 1958, for the divestment of its international operations within six months of the commission's approval of the plan. In a 1943 merger proceeding, the commission had directed Western Union, under statutory authority, to use due diligence to bring about a divestment of the international operations as soon as possible. While the company acquiesced in the 1943 order without appeal, it apparently made no tangible headway toward divestment during the intervening years.

Lease Impedes Divestment

Western Union holds by lease a number of international cables from an English corporation under a provision forbidding assignment of the lease unless Western Union's land-line system accompanies the

assignment. In view of this lease provision, any plan for divestment must be conditioned upon the willingness of the lessor to waive this requirement, the court pointed out.

Also, under the lease, Western Union must remain liable for performance of the convenants of the lease, which does not expire until the year 2010, in the event of assignment of the properties. This continuing liability, the company contended, constitutes an obstacle to divestment. But the court ruled, in agreement with the commission, that Western Union could not refuse to divest solely because it would be required to retain a guarantor's liability with respect to the property.

The court rejected the company's view that none of the methods of divestment suggested by the commission was required by statute or was feasible. Suggested methods were a private sale, a public sale, a sale to Western Union stockholders, or the formation of new corporations with several alternative methods of stock transfers.

Duty to Find Feasible Plan

The court pointed out that Western Union has the burden of finding a feasible plan, not the commission. The court noted that Congress did not limit the method of divestment to that of sale only. It was further observed that transfer of the cables for all the stock of a new corporation may be a proper consideration for the property to be divested, and that subsequent exchange or distribution of such stock by Western Union to its stockholders would not make the stock any the less consideration for the property.

The court recognized the commission's authority to require Western Union to come forward with divestment plans, one after another, until a feasible one is found. But it was held, nevertheless, that the commission was without statutory warrant in fixing an unconditional deadline for submission of a plan, without regard to whether exercise of due diligence could produce, within the time fixed, a feasible plan which would afford proper consideration for the property to be divested, or whether the company's legal obligations under the lease would permit the divestment without a transfer of the land lines. The case was, accordingly, sent back to the commission for further proceedings. *Western U. Teleg. Co. v. United States et al. 267 F2d 715.*

Telephone Company Authorized to Issue Preferred Stock to Common Stockholders of Record

THE Nebraska commission authorized the Lincoln Telephone & Telegraph Company to issue 30,000 shares of 5 per cent convertible preferred stock at a price of $100 per share to common stockholders of record as of a specified date. Common stockholders of record would receive bearer warrants entitling them to subscribe to preferred stock on the basis of one share of the new stock for each nine shares of stock owned by them.

The commission found that the company's bank borrowings would be increased to approximately $3,210,000 by August 31, 1959. The borrowed funds will have been expended by the company in the payment for the acquisition of property and the construction, extension, improvement, and betterment of its plant, facilities, and service. The net proceeds from the sale of the preferred stock would be applied toward the reduction of such bank obligations.

The preferred stock was subject to re-

demption, at the option of the company, in part or in whole, at a price per share equal to $100 plus a redemption premium of $5 per share. Also, the stock was convertible, at the option of the stockholders, into shares of common stock at specified conversion prices.

Any shares of the new stock not subscribed by the exercise of warrant rights would be purchased by underwriters pursuant to an executed underwriting agreement. The commission found net additions to the company's plant during a five-year period ending December 31, 1958, amounted to $17,284,169. During this period a total of 24,579 phones had been added to the company's system. As of June 30, 1959, the company had 139,186 phones in service. Of this number 84.41 per cent were automatic or dial.

The commission concluded that the issuance was proper and necessary and that the use of the capital to be secured by the sale of the new stock was reasonably required to enable the company to carry on its business. *Re Lincoln Teleph. & Teleg. Co. Application No. 21820, August 28, 1959.*

Commission Not Required to Consider Competitive Effect of Stock Acquisition on Existing Carriers

THE Massachusetts supreme court dismissed a bill in equity to annul a commission order authorizing a motor carrier to acquire all the stock of a company holding an irregular route common carrier certificate and a contract carrier permit. The commission was held to have made a reasonable and lawful determination that the sale of the stock would be consistent with the public interest.

The fact that the purchasing company was a holding company, and did not operate motor carrier services, or that none of its subsidiaries were engaged in the precise type of service provided by the holder of the certificates, was considered immaterial, in view of the purchaser's statement that it intended to conduct the services presently conducted by the holder, and in view of the financial ability of the purchaser to carry on the holder's operations.

The entry into the state of a powerful motor carrier reasonably forecasts increased competition for existing carriers, the court stated. But it thought that the statutes did not require the commission to appraise the effects of such entry in the case of a sale of stock where no new right had been granted and there had been no aspect of consolidation of existing carriers. *Retail Stores Delivery, Inc. et al. v. Massachusetts Dept. of Pub. Utilities, 159 NE2d 646.*

Authority to Truck Explosives Made Subject to Time Limitation

THE U. S. district court upheld an order of the Interstate Commerce Commission imposing a five-year limit upon the term of a certificate authorizing a trucking company to transport explosives. It held that the commission is empowered under the Interstate Commerce Act to impose such a time limitation in the public interest, since certificates may include such reasonable terms, conditions, and limitations as are necessary for safe operation of motor carriers. A certificate which expires by lapse of time at a certain date is one containing a condition

within the purview of the Interstate Act.

The court said that if a rational basis exists for a conclusion reached and approved by the Interstate Commerce Commission in issuing certificates, the court cannot inquire into the wisdom or soundness of its reasoning. It is limited to a determination of the question whether the statute authorized the commission to issue the limited term certificate.

Safety Factor

The court believed that the factor of safety in the transportation of explosives by motor carriers was undoubtedly uppermost in the minds of the commissioners when they considered the carrier's application for a certificate. They referred to the vast number of reckless and incompetent auto drivers, operating all types of vehicles, who would be sharing the highways with the carriers of explosives. The sole purpose of the time limitation in the certificate was to enable the commission to review the carrier's safety record when and if a renewal of such operating authority might be sought. The court believed that the commission had acted reasonably and that the limitation on the certificate in no way interfered with or restricted the company's operations in its transportation of other property. *Gateway Transp. Co. et al. v. United States et al. 173 F Supp 822.*

Commission Has Power to Vacate Prior Order and Approve Examiner's Report

THE Nebraska supreme court held that there was no statutory provision specifically prohibiting the commission from reconsidering any action it had taken on previous orders. The commission has the power to vacate prior orders without taking any additional evidence, and to approve an examiner's report, notwithstanding that it conflicts with the previous order. The case involved an application for extension of a motor carrier's regular route certificate to permit service to two additional towns.

A commission order takes effect from the time prescribed therein, said the court, and continues in force unless the order is annulled, revised, or modified by the commission, or set aside by a court of competent jurisdiction. The commission could justifiably vacate the previous order which had held that the evidence did not warrant the granting of the certificate extension, after determining that the evidence taken before the examiner did warrant the granting of the certificate.

On review, the court's inquiry is limited to determining whether or not the commission acted within the scope of its authority and whether or not the order is reasonable and not arbitrary.

The burden was on the applicant for the certificate to show that the operation under the certificate was and would be required by the present or future public convenience and necessity. In determining the issue of public convenience and necessity, controlling questions are whether the operation will serve a useful purpose responsive to a public demand or need, whether this purpose can or will be served as well by existing carriers, and whether it can be served by applicant in a specified manner without endangering or impairing the operations of existing carriers contrary to public interest. The applicant, in the instant case, had met its burden, and the evidence was sufficient to show that public convenience and necessity required the proposed extension. *Re Miller, 97 NW2d 265.*

Accounting Methods for Nuclear-fueled Generating Plant

THE Michigan commission prescribed accounting methods for expenses incurred in the construction and operation of a proposed nuclear-fueled boiling-water reactor electric-generating plant. This action was taken at the request of Consumers Power Company, which was planning on building such a plant.

One of the areas served by Consumers is the upper part of Michigan, where the demand for electricity has been increasing to the point where the company has determined that the needs of the area would be best served by the construction of an electric-generating plant. The area involved is one of comparatively high fuel costs.

In recent years, Consumers has participated in research and development programs directed to the development of the commercially competitive use of nuclear materials in the generation of electricity. Currently, it is making annual contributions to atomic power development organizations in connection with the development of atomic fuels and the construction of a fast neutron breeder reactor plant. Pursuant to an earlier commission order (15 PUR3d 471), the company is charging such expenditures to Account 801, Miscellaneous General Expenses.

Following investigation of the subject, Consumers concluded that the boiling-water type of nuclear reactor was of a more highly developed state of technology than other types of atomic reactors and that the use of such a reactor in the generation of electricity offers promise of becoming economically competitive with conventional generating plants within the foreseeable future. It submitted proofs that such a plant would definitely have a gross electric output of not less than 50,000 kilowatts, and with a possible output of 75,000 kilowatts. Accordingly, the company planned to arrange the design of all equipment external to the reactor to be of a capacity of 75,000 kilowatts.

It was argued that detailed accounting instructions should be deferred until a later date, presumably when actual costs have been experienced and the project, on the books, is ready to be transferred from Account 100.3 to appropriate accounts. The commission disagreed, believing that the project was in the public interest, that research aimed at achieving lower fuel costs was timely, that its design was well advised, that the plant's location and the company's system would be useful, and that the total estimated cost was not disproportionate to the financial ability of the company. In prescribing accounting rules, the commission observed that individual accounts may vary somewhat as the actualities are experienced.

The commission held that expenditures in the aggregate amount of $2.5 million for nuclear-fuel research and development and the excess cost to be incurred in constructing the proposed plant should be charged to Account 801, Miscellaneous General Expenses. It believed that such costs were properly associated with research and development for the commercially competitive use of nuclear materials in connection with the generation of electric energy.

The commission ruled, however, that the maximum amount to be authorized at this time, to be included in Account 146, Other Deferred Debits, should be $12 million. Accounting authority for charging an additional amount to that account, brought about by the possible failure to achieve the 75,000-kilowatt capacity anticipated, was not granted at this time because of the indefinite nature of the plant's capacity. The commission said that such authority might be sought when the ac-

tual capacity has been determined.

The commission noted that Consumers Power Company should diligently investigate the possibility of obtaining financial assistance for the project from the United States Atomic Energy Commission. *Re Consumers Power Co. D-875-A-59.2, September 3, 1959.*

Limitations on FPC Power to Impose Conditions When Issuing Temporary Gas Producer's Certificate

THE U. S. court of appeals for the tenth circuit dismissed a petition by Sunray Mid-Continent Oil Company for review of an order of the Federal Power Commission granting a temporary certificate in one case and remanded for further proceedings an order granting a certificate in another case. The two cases had been consolidated on review, upon the representation that the determination of a single question of law would be dispositive of both cases, this question being: Can the Federal Power Commission impose conditions upon the grant of a temporary certificate of public convenience and necessity? The court said that although the stated question was present in each case, separate consideration of the cases was necessary because of factual differences of legal significance.

Premature Review before Actual Grievance

Sunray as an independent producer of natural gas, in conjunction with applications for permanent certificates, had sought temporary authorization to initiate sales pursuant to § 7(c) of the Natural Gas Act. After first denying authorization, the commission by letter order granted temporary authority but provided that authorization and acceptance of the rate schedule were without prejudice to such final disposition of the certificate applications as the record may require and, furthermore, that once service is commenced under this authorization it may not be discontinued without permission of the commission.

Sunray initiated deliveries upon receipt of the commission letter order, but informed the commission by letter that it would continue such sale pending final commission action and that it retained its right to accept or reject such certificates as might be issued and to cease deliveries if the final action should not be in accordance with its applications. The commission, upon receipt of this letter rescinded its grant of temporary authority, asserting that Sunray had evinced an unwillingness to comply with the commission's lawful authority.

Thereafter, the commission reinstated the temporary authorization, stating as its reason that its order of rescission had been premised upon the erroneous belief that Sunray had not initiated deliveries so as to affect public convenience and necessity in such aspect. The reinstatement order reiterated the commission's earlier contention that Sunray could not terminate service without commission approval.

The court said that its right to review orders of the commission is limited to instances where the petitioner is presently aggrieved. This led the court to hold that the present petition was premature. The company was presenting a case based upon "eventualities." It was currently selling gas and had made no affirmative effort to cease. The commission had made no objection to the status quo. The court said that regardless of Sunray's present ap-

prehension and the commission's present warnings, it would take further administrative action to create an actual grievance. If the commission had no power to condition temporary certificates or had imposed an unlawful condition, the actions had no present impact upon the company. This appeal was dismissed.

Review When Order Holds in Abeyance Potential Conditions

In the other case, by letter order, the commission granted an application for temporary authority subject to a price condition, with a provision for filing of an undertaking to assure a refund. The commission denied an application for rehearing, but later modified its order denying rehearing by substituting a provision that acceptance of the certificate should be subject to any conditions with respect to price which the commission might lawfully impose in issuing a certificate, with a further provision as to an undertaking for a refund. A second petition for rehearing was denied and the petition for review followed. Sunray had not initiated service under the purported authority of the commission order.

The court said that since acceptance of the order was clearly and unequivocally conditioned in such a manner as to immediately affect Sunray if that company should initiate temporary service, it was apparent that the company could presently question the right of the commission to condition temporary certificates at all, and, in particular, as done in the instant case.

The court said that the power of the commission to impose conditions upon the issuance of permanent certificates is well-established, and while no specific statutory authority exists for the imposition of conditions upon temporary certificates, such authority seems to be inherent in the power to summarily grant or reject applications for temporary service. The court held that the power of the commission to issue temporary certificates is not limited to the power to accept or reject the application under the terms submitted by the applicant and that the commission may tender a conditional acceptance.

But, the court continued, it does not follow that the broad power granted the commission is an absolute power. If the commission deems it in the public interest to accept an application conditionally, such conditional acceptance must be in accord with the provisions of the act and must meet the test of constitutional due process. The applicant does not by filing an application submit irrevocably to the jurisdiction of the commission. It is by the initiation of public service that the applicant's property becomes dedicated to that public service and the commission's jurisdiction. The commission need not accept conditions contained in an application and the applicant need not accept conditions imposed by the commission in its initial acceptance.

The court quoted the opinion of the Supreme Court in Atlantic Refining Co. *v.* New York Pub. Service Commission (1959) 29 PUR3d 70, recognizing the right and duty of the commission to give consideration to the reasonableness of a proposed price upon an application for a permanent certificate. The reasoning was said to be equally applicable to the issuance of temporary certificates.

In the Atlantic case, the applicant had tendered a certificate setting a firm initial rate with a condition allowing potential increase. In the instant case no initial rate was accepted. None was rejected. The applicant was merely "asked to speculate as to what the ultimate temporary rate may be, to rely on the ultimate fairness of the final determination, and to meanwhile dedicate its gas to public service." Com-

mission action was neither acceptance, rejection, nor proper conditional acceptance. It purported to hold in abeyance potential conditions. The court said that the company was denied its right to have the commission act upon its application with such certainty as to allow the exercise of choice upon Sunray's part. *Sunray Mid-Continent Oil Co. v. Federal Power Commission, Nos. 6043, 6061, September 1, 1959.*

Electric Co-operative Prohibited from Making Primary Extension

THE Wisconsin commission has ruled that an electric co-operative is prohibited from making a primary extension to supply service to a proposed school where service is available from the facilities of an electric company through a secondary voltage extension. In determining when "service is available," noted the commission, the particular route that would eventually be used in supplying the service need not be considered, since it cannot be known in advance.

Also, the commission need not consider whether, under certain circumstances, a primary line extension rather than a secondary line extension will be employed. It need only determine that service is available by means of a secondary voltage extension. *Re St. Croix County Electric Co-op. DR-19, August 20, 1959.*

Delayed Lumber Service Constitutes ICA Violation

THE U. S. district court held that a railroad which gave delayed lumber service to certain transit wholesalers and dealers for the purpose of inducing such wholesalers and dealers to ship upon the railroad's lines, to the exclusion of competitors, violated § 6(7) of the Interstate Commerce Act, and § 1 of the Elkins Act. Such a practice was held to constitute a device for the offer and gift of rebates and was, therefore, discriminatory in violation of the statutory provisions stipulating that every carrier must abide by filed and published tariffs and prohibiting carriers from refunding or remitting in any manner or by any device any portion of the rates, fares, and charges, or extending to any shipper or person any privileges or facilities in the transportation of passengers or property, except as specified in the tariff. The railroad's claim that delayed lumber service was the result of competitive necessity provided no legal defense to the government's action to enjoin the railroad from continuing the practice. Neither did the railroad's claim that the delayed lumber service was a matter of long-established custom provide a legal defense. *United States v. Union P. R. Co. 173 F Supp 397.*

FCC Award of Radio Station Permit and Denial of Rival Application Remanded

THE U. S. court of appeals remanded a Federal Communications Commission order granting a radio station construction permit to one applicant while denying a mutually exclusive application for a permit to construct a station in a nearby town. The court decided that the matter should be reopened for the purpose

of taking more evidence, in view of its conclusion that the record was inadequate to support the commission's conclusion.

The court said that the key issue in cases involving mutually exclusive applications for radio station permits is the comparative needs of the communities involved. Under such circumstances, it said, the commission could hardly find that one community's need was greater or less than the other's without substantial evidence as to those needs. It noted that present and proposed programs would seem to be an essential element in testing comparative community needs. No such evidence of programing appeared on the present record.

Interference Factor

Similarly, with respect to the interference the unsuccessful applicant would cause to an existing station, there was no evidence of the need for the existing service lost by interference, on the one hand, as against the need for the service proposed by the new facility, on the other. The court believed that such evidence is necessary in determining the weight to be given interference resulting from a proposed station.

In conclusion, the court said that if the commission purported to differentiate between the two stations on the basis of the respective needs of the two communities, then it should have required more evidence, regardless of any stipulations between the parties to limit evidence in the case. *Harrell (Star of the Plains Broadcasting Co.) v. Federal Communications Commission et al. 267 F2d 629.*

Other Recent Rulings

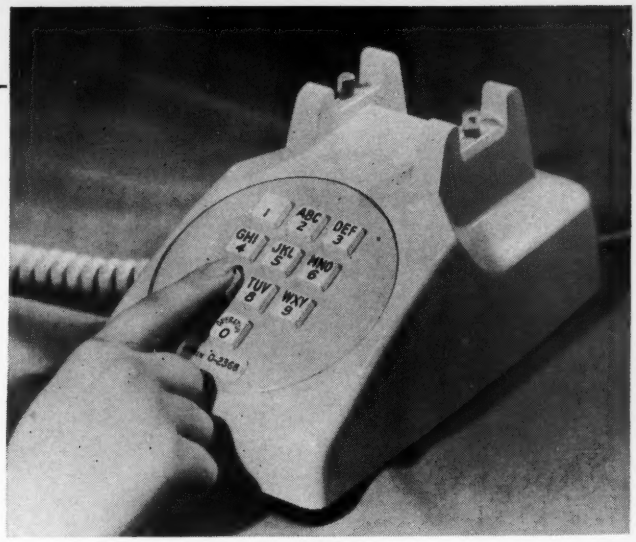
Public Need Paramount. The U. S. district court held that the Interstate Commerce Commission, in passing upon an application for a certificate to operate as a motor common carrier of cement, erred in not assessing the advantages of the proposed service in relation to public need, notwithstanding that shippers of cement had testified that they would not presently use the service. *Commercial Transport, Inc. v. United States, 173 F Supp 524.*

Line Load Ordered Reduced. The Wisconsin commission ordered a telephone company to abandon a policy of providing urban multiparty business and residence service with a line load between five and six subscribers per circuit and to reduce the line load to not more than four subscribers a circuit. *Re Cecil Green Valley Toll Line Co. 2-U-5185, July 23, 1959.*

Additional Expense Unwarranted. The Wisconsin commission held that the fact that the new management and major stockholders of a small telephone company were resident in another city did not justify an increase in general office expense occasioned by moving administrative headquarters to that city where the former management had operated essentially the same property at much lower costs, there had been no improvement in service, and substantial numbers of additional customers were unobtainable because of the rural nature of the service area. *Re Central State Teleph. Co. 2-U-5095, July 24, 1959.*

HE TELEPHONE DUSTRY'S RWARD LOOK

onding to requests for statements by tele- e company executives, this collection of s represents an impressive cross section hat the telephone industry in the United s is thinking about and what it is doing planning at the executive level during critical period of postwar expansion and inflation. This feature includes state- s by presidents or other executive officials merous telephone companies with respect nerchandising and plant construction rams.



PHONE OF THE FUTURE: Electronic advances such as the transistor have made this "push-button" telephone possible. Consumer tests have been highly favorable.

FRANCIS X. WELCH, *Editor*

this executives' compendium ature this year, this Editor has vored to develop a collection of ments dealing with the efforts of hone companies to work out effective programs for taking of revenue requirements. This, rn, is obviously dictated by the nd for more construction as well as the modernization and improvement of present plant facilities. These statements tell about the plans different companies may have now or for the coming year or other projected period to balance plant requirements with revenue requirements. They include discussions of any modernization or promotional campaign or for the development of special services not previously offered.

Readers may also obtain the benefit of the results to date of programs already under way and some suggestions about coping with problems and difficulties which have been encountered. Thus, the readers may be able to profit from such experience.

American Telephone and Telegraph Company

In connection with a discussion of the marketing and other promotional developments of the Bell System companies reference is made to the feature article in this issue, entitled "New Product Program Is Helping Bell System Prosper" by William R. Reiss, Administrator, New Product Planning, of the American Telephone and Telegraph Company, which appears on page 676.

General Telephone & Electronics Corporation

New York, New York

DONALD C. POWER, *Chairman of the Board and Chief Executive Officer*

ODAY's rapid progress in communications makes continual expansion in service and equipment essential if the industry is to furnish public with the best in communications. Such progress is costly. In the of General Telephone & Electronics Corporation, we expect to some $186 million in plant expansion in 1960, and such expansion, year after year, as we have done, requires more than ordinary attention to the amount of revenue to be obtained from new as well as established plant.

In our company, we made a most important move in this direction several years ago when we created the office of Vice President, Revenue Requirements, whose main task is to make sure that we continue to earn a sufficient return on our investment. Each telephone operating company, in turn, has such an officer to keep close check on individual operations. Higher efficiency, greater economy of operation, how to get more service and revenue out of existing equipment, a careful watch on trends, are some of the areas which are getting our most thoughtful attention.

More efficient, more economical op-

(*Continued on page* 30)

eration because of improvements like Automatic Toll Ticketing does a better job of billing long distance calls and, we believe, will ultimately result in lower cost. Microwave facilities, now developed to a point where they are thoroughly reliable, permit heavy traffic expansion at substantial savings, and, of course the ultimate development of electronic switching will bring a new conception of efficiency to the industry.

Another area where we believe our earnings will be helped is our sales effort. We have developed a sales program which entails an investment of some $3 million, but early reports already show that our estimates of $16 million annual increased revenue are obtainable. Still another development is the growing use of data transmission, which will use our facilities in the hours when the traffic load is normally at its lowest point.

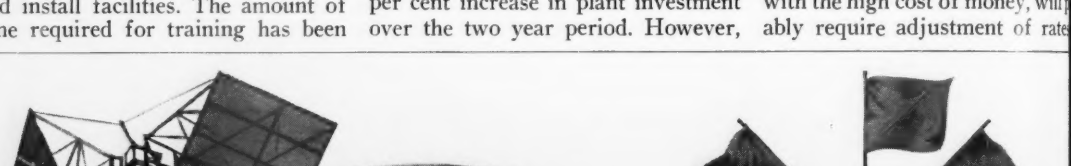
These and other such savings and efficiencies are helping to build the vitality into the business necessary to meet growth requirements. We must find ways and means to make pos a good return on our investments we must do everything we pos can to put in effect economies o eration, increase telephone usage revenue on existing plant capac and promote every efficiency w builds better service and more nue. We are convinced that this proper step in the direction of ning ahead to meet the demands increased revenues on a sound practical basis.

California Interstate Telephone Company

Victorville, California
WILLARD WADE, *President*

THIS year we are placing increased emphasis on our public relations and sales efforts. Two new departments were created in the company earlier in the year to implement these functions. The results have been highly satisfactory in both fields. However, we are finding that the real effort must be made by the segment of our employees who meet the public and install facilities. The amount of time required for training has been considerable, but the dividends are exceedingly rewarding. Our sales effort is bringing in increased revenues each month, and we are acutely aware of better relations with our subscribers and the general public.

Our construction program for the two year period ending March 31, 1960, was estimated to result in a 40 per cent increase in plant investment over the two year period. However, due to our sales effort coupled extremely rapid growth, we now ticipate that our plant investment expand by about 46 per cent. Be of the inflated costs of new cons tion, it is expected that our rate le established in 1952, will not pr increases in revenues comparab the plant expansion. This, tog with the high cost of money, will ably require adjustment of rate



GROWING WITH THE PACIFIC NORTHWEST

The Pacific Northwest continues to be one of the fastest growing areas in the country. West Coast Telephone Company now serves almost 170,000 telephones, with 87 per cent of the total dial operated. Modern, efficient methods and equipment have enabled this company to maintain its position as 10th largest of the 4,000 Independent Telephone Companies in the nation.

West Coast Telephone

WEST COAST TELEPHONE COMPANY

Serving the fastest-growing communities in the USA

300 MONTGOMERY STREET • SAN FRANCISCO, CALIFORNIA

California-Pacific Utilities Company

San Francisco, California
H. C. BRIGHT, *Telephone Engineer*

HE Telephone Department of our company has been very busy this

ith the increasing inflow of peo- the rural and country areas and wer increasing requests for tele- e service in these areas, we are ng every economical effort to de these subscribers with the best ble telephone service. For ex- e:

our Riddle, Oregon area we are erting a terminal-per-line ex- ge to a terminal-per-station op- on. This conversion is scheduled November of this year. Our sub- ers will be provided with equip- compatible with the Bell System t distance dialing network. We considering the economical ad- ges of toll ticketing equipment his and our Colusa and Elko dis- .

Lamoille, Nevada, a small but expanding rural area, is scheduled for a new telephone exchange. At the present time, and until cutover in November 1959, service is provided over rural lines extending into our toll center at Elko, Nevada, some twenty miles away. After cutover, these rural subscribers will be able to initiate local calls without any interference from the operator. This telephone exchange will provide the Lamoille subscribers with the most modern telephone service.

Our Westwood exchange area, located in the Northern part of the State of California, is also scheduled for a new telephone exchange to be cut over in December 1959. The present telephone facilities could not economically be expanded thus making necessary the engineering of a new building and exchange. This exchange will be extended into the rapidly growing Lake Almanor area.

These cutovers present many problems, all of which can be solved if they are seen in time. To overcome these problems, we have used very successfully what we call "Coordination Programs." These programs outline each step of a cutover—from the ordering of equipment to the changing of directory numbers. These programs are in the field well in advance of cutover. Meetings are held every month and sometimes twice a month prior to cutover and each step is noted and a date given for each operation. These dates and operations are then checked at each meeting. Problems that arise are taken care of immediately, insuring as smooth as possible a dial cutover.

California Water & Telephone Company

San Francisco, California
PETER A. NENZEL, *Vice President & General Manager*

HE exploding population of Southern California is nowhere ayed more graphically than by growth statistics of California er & Telephone Company, twelfth st independent telephone com- and the fastest growing utility mparable size in the nation.

nce the end of 1949, California er & Telephone Company has aged 10,000 new telephone instal- ns per year, bringing its total ber in service from 40,000 to al- 150,000 today. The number of r consumers also has grown- lily, although at a slower rate. At end of 1949, 38,000 consumers served; today 61,000 are being ided with water.

his amazing growth naturally has ssitated a tremendous addition to ompany's plant equipment. At the of 1949 total utility plant in serv- as less than $25,000,000. Today, figure exceeds $90,000,000. Dur- the same period, operating reve- have leaped from $4,500,000 to than $21,500,000, while net in- went up from $630,000 to $3,- 000.

the last six years alone, Cali- a Water & Telephone Company built or enlarged 26 telephone ness offices, central office build- ings and shops. An ever expanding construction program is in process and by 1961 every structure in the telephone division will be less than eight years old and the company will be 100% dial operated. Annual construction budgets during this six year period have averaged in excess of $11,000,000.

New, efficient central offices, thousands of new lines, and dial conversions represent only a portion of the company's expansion program. California Water & Telephone Company prides itself on being an industry leader in many of telephony's advancements. It was the first company to convert all exchanges in the Los Angeles extended area to automatic toll ticketing; it became the first Independent Company to install a fully automatic dial system in a hotel, offering guests the opportunity to dial their own numbers; shortly, it will become the first company to make long distance dialing possible from a pay phone; and it was among the first few companies to convert to electronic mark sensing of customer toll records.

In addition to offering its subscribers the most modern, efficient service, California Water & Telephone Company has achieved a reduction in op-

(*Continued on page* 32)

How to CONTROL and ALARM the TOWER LIGHTS of UNATTENDED Microwave and Communication Stations

PHOTO ELECTRIC PANEL
Automatically turns Tower Lights ON and OFF in accordance with FCC regulations
FLASHER PANEL - Automatically Flashes Beacon Lamps – with balanced load provisions.
ALARM PANEL - Automatically provides signals indicating failure of any lamp, power or control.

Model LC 201
TOWER LIGHTING CONTROL UNIT
(for Two Light Levels)
Model LC 101 (for Single Light Level)
Model LC 301 (for Three Light Levels)
Models also available with separate Alarm Signal for each Beacon Lamp.

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Manufacturers of
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BURBANK, CALIF.

erating costs through the adaption of these electro-mechanical achievements. However, rising taxes, increased labor costs and higher priced plant equipment, more than offset any time and money saving efficiencies that may be achieved and the company recently applied to the California Public Utilities Commission for new rates throughout its telephone division. If approved, these rates should provide new annual revenues of $1,300,000.

In 1956, California Water & Telephone Company inaugurated a sales and merchandising program designed to make the customer more aware of the increased and improved service available and the results have been extremely gratifying. During the first half of 1959, the merchandising department has been responsible, through its concentration on high income items, for stimulated sales in excess of $518,000, more than the total for the entire year of 1958.

Other than being responsible additional profit for the company merchandising plan of Calif Water & Telephone Company h sulted in better public understa and acceptance of the quality quantity of service offered to scribers. These results are imme able in monetary terms but mak a firmer base for future improve and growth.

Capital City Telephone Company

Jefferson City, Missouri
FOSTER B. MCHENRY, *President*

THE Capital City Telephone Company serves about 15,800 telephones in Jefferson City, Missouri's capital city, and the surrounding area.

Since 1950, the plant investment has doubled without an additional overall rate increase being required. Two new toll settlements resulting from USITA efforts; periodic directory advertising rate increases and extensive coin telephone development together with an intense marketing program begun in 1955 have made this possible. Station gain for the four years from 1955 through 1958 was 95 per cent greater than the four years 1951 through 1954.

In 1958, increased non-recurring charges for installations, moves, and changes were granted to offset the effect of increased costs.

During the next five years, 1959 through 1963, net additions to plant are expected to be about two million dollars. Major additions include underground cable and central office equipment, primarily for the upgrade program; 2-5 numbering and DDD; large PABX systems; a storeroom and garage facility; and an addition to the present central office buil Investment per station is expect increase from $222 to $295.

Revenue requirements are like increase about 46 per cent with ticipated revenues about 40 per higher.

Intensive advertising and selli present services and introductio new equipment and service is exp to add a substantial part of anticip revenue growth. At the end of long distance service, directory a tising, and paystation revenues counted for 27.8 per cent of oper revenues. Operating expenses, ever, under current conditions likely to continue to increase faster rate than operating revenu

A number of ways in which hope to meet revenue require are:

1. Increase paystation local call from 5¢ to 10¢.
2. Further increase non-recur charges to reflect higher wage cos
3. Increase straight line mil rates outside the city to support growth.
4. If USITA's efforts are suc ful, toll service revenues will be creased to the extent that indepen companies and their customers receive a fair or comparable shar these revenues.
5. Re-rate special services that out of line.
6. Increase directory adverti rates commensurate with sta growth.
7. Intensify upgrade program wh low line fills exist.
8. Reduce earnings requirement leasing when possible.
9. Mechanization of operat where feasible and continuing eff to simplify and expedite increa workloads.
10. Moderate increase in local s ice rates.

P&H "PROFIT-YARDS"

Houston Lighting & Power Company's 50-ton P&H 855B-LC crane with extra wide, long crawlers

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Profit-Lifts are the end product of advanced P&H design and engineering features that result in higher production, lower operating cost—*more net profit* for P&H users. Truck cranes from 10 to 80 tons—crawler cranes from 20 to 110 tons—crawler excavators from ½ to 3½ cu. yds. See your P&H dealer for all of the profitable facts or write: Dept. 534A, Harnischfeger Corporation, Milwaukee 46, Wisconsin.

HARNISCHFEGER

Chenango & Unadilla Telephone Corporation

Norwich, New York
W. S. KINGMAN, *Executive Vice President*

FOR a general statement on independent telephone industry developments by Mr. Kingman, see page 731.

Clifton Forge-Waynesboro Telephone Company

Staunton, Virginia
WM. W. GIBBS, *Vice President*

ur effort to obtain sufficient reve-
e to attract the necessary capital,
de a fair return on stockholder
tment and hold our rates at their
nt level in spite of the current
d of rising costs, we have em-
ed on a two part program consist-
f (1) a sales promotion of new
auxiliary services and, (2) the
poration of technological im-
ements in plant equipment and

r sales program has taken the
of an employee participation
promotion. During the sixteen
s, May through August 1959, our
oyees sold 749 stations represent-
an increase of 4.1 per cent as
st a gain of only 187 stations, or
per cent increase for the first
en weeks of the year.

During the first twelve weeks of our campaign, the employees were compensated at a rate of approximately 25 per cent of the first month rental of the service sold. For the last four weeks they were compensated at a rate of about 50 per cent of the first month rental.

In addition to cash awards, each employee selling sufficient service to earn $25.00 was given recognition in the employee monthly magazine and a suitably inscribed colored telephone set was also awarded those whose earnings reached $50.00.

This sales program not only resulted in substantial increases in revenue but had the effect of making each employee more "sales conscious." A modified version of this recent campaign will be continued through to the end of the year.

The improved efficiency and reduction of maintenance and operating costs achieved and planned by our plant department include placing cable under pressure, establishing one man cable maintenance and repair crews and standardizing on the use of color coded plastic cables and ready access terminals.

Within the next year we will complete the conversion of all our exchanges to 2 letter, 5 digit numbering operation. This will increase our revenues as a result of improved toll settlement.

Studies are now being made to determine the advantages of converting

(*Continued on page* 34)

Best Way You Can Keep Informed on Utility Regulation:

P.U.R. QUESTION SHEETS

With the least possible expenditure of time, effort and money, *utility executives, lawyers, accountants, engineers* and *others* interested in any *phase of public utility regulation* can keep well informed through these *brief, four-page* leaflets issued every two weeks.

They consist of 10 questions and 10 authoritative answers based on current decisions revealing court and commission views pro and con. Annual subscription $10.

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425 13th Street, N. W.
Washington 4, D. C.

Florida Telephone Corporation Serves An Area of Almost 6,000 Square Miles In Central Florida—"Empire of the Sun and Heart of Citrus Land"

One of the larger, most rapidly growing, and most progressive independent telephone companies in the country, in one of the fastest growing sections of the nation.

Operating an extensive network of company-owned local facilities, microwave radio relay and long distance lines, eighteen exchanges and seven rural sub-exchanges in eight counties in the heart of progressive Central Florida.

LOOKING OR DOING?

Chuck Bradley
Osmose Pole Inspector

Many pole owners have inspection procedures in their standards and some actually follow them. At present, though, even the most thorough inspection-only methods just give you a ringside seat to *watch* decay progressing.

Here's where we can offer you a big plus. Our inspection procedure for older poles is the most thorough in the business. In addition, when we find decay, we *do something about it* by applying our proven preservatives where they will do the most good.

The upshot is that we can cull out the weak sisters, save expensive replacements, and keep your pole system in topnotch shape.

Our method applies to all types of timber and original treatments. If you would like one of our descriptive booklets, drop me a line.

Chuck Bradley

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OF AMERICA, INC.

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Buffalo 9, N. Y.
ELmwood 5905

our exchanges to direct distance dialing.

In addition to the above two major programs, we have taken an active interest and participation in the industrial development of the area we serve. We have examined and improved our revenues from sales of advertising in our directories and have added numerous auxiliary services such as telephone answering service and subscriber transfer service. We have placed a large number of outdoor pay stations at advantageous locations, and encouraged the use of semi-pay stations where circumstance ranted.

All of our efforts to increase nues and reduce costs have been with the consideration of maint the highest possible standard of ice to our customers.

We feel that our approach ha successful as demonstrated by th that our company has requeste received only two rate increases past thirty years.

Commonwealth Telephone Company

Dallas, Pennsylvania

H. H. Butler, *Vice President & General Manager*

Commonwealth Telephone Company's gross construction in 1957 and 1958 averaged about $2,600,000. At the present rate for 1959, it is $2,500,000, and is the company's budget for the year. In early December with the dial cutover of one of our offices, we will have about 92 per cent dial telephones—the remaining 5 per cent common battery manual and 3 per cent magneto.

Our construction program for 1960 and 1961 should continue at about the current level. Since most of our dial conversion is in back of us, we are concentrating on providing facilities to increase our interoffice trunks, reduce the number of customers on rural lines and care for growth and regrading within the base rate areas, with some extensions of base rate areas programmed.

During 1958 the company sold at reasonable cost $1,050,000 in common stock, $750,000 preferred stock and $2,000,000 funded debt, a total of $3,800,000. It is not planned to do any permanent financing this year or in 1960 and perhaps 1961. We have arranged with our bank for a line of credit of several million dollars, which is drawn upon as required. Our depreciation expense and retained ings will generate this year some more than $1,000,000, increasi the succeeding years as the size operation grows.

To meet the new money con tion requirements we recogniz need to maintain our earnings in to attract capital at reasonable Since the business is run on an nomic basis, there are two av open to help maintain our ea position:

1. Sales effort directed toward earning equipment and services,

2. Filing for rate adjustments appropriate.

Since early 1958 we have bee tively promoting the sale of exte stations. As a result, we have proved substantially the relatio of extensions to main stations. we have been pushing the sale o equipment and PBX systems. nues have been improved as a by about $45,000 annually from three activities alone. We re filed for an increase in rates in our 72 exchanges, amounting to $110,000 annual revenue. These changes were formerly operate

SUTTLE EQUIPMENT CORPORATION

LAWRENCEVILLE, ILLINOIS PHONE: 78

Many telephone companies think of Suttle when in a hurry. Why n call or write when you have need for any of the following materia

Cook Protectors	Joslyn Hardware
Lorain Sub-Cycle	Chance Anchors
Autelco Paystations	Arrow Staplers
Benjamin Howlers & Relays	Keystone Steel Wire
Runzel Cords	Klein Tools
Weller Soldering Guns	Brooks Climbers
Kester Solder	Seymour Smith Tree Trimmers
Gray Label Batteries	Suttle Reels
Stewart Testing Equipment	Booths
Nicopress Tools & Sleeves	Printing

essor companies and their rates
t up to the companywide level.
hus, improve our earnings and at
me time eliminate discrimina-

The company believes that in order to discharge its obligation to its customers to provide adequate and ever-improving service, it must be in a healthy financial position to attract the necessary capital. To meet this situation it follows closely its earning position and will take steps to improve it by application for rate relief when appropriate.

The Eastern Indiana Telephone Company

Winchester, Indiana

FRANCIS SIMPSON, *Executive Vice President*

HE Eastern Indiana Telephone Company which operates 17 exes in Eastern Indiana has exd its toll facilities. The Win-r toll center with 9 tributaries ith increasing toll business will now be served with adequate toll circuits.

At a cost of $150,000.00 new 51 pair, 19 galvanized toll cable has been installed between Winchester and Muncie, Indiana and will provide toll circuits for 8 Winchester-Muncie and 18 Winchester-Indianapolis circuits.

This cable operates with loading and repeaters and subscribers are well pleased with these facilities.

Florida Telephone Corporation

Ocala, Florida

MAX E. WETTSTEIN, *President & General Manager*

he year 1958 Florida Telephone hieved another great milestone progress over the years when it leted its dial conversion and 2-5 ering modification programs.

of its 18 main exchanges and 7 xchanges in eight counties in Central Florida are now dial operated and 2-5 numbering. The completion of both of these programs was a prerequisite to full participation in direct distance dialing.

In 1958 and in 1959 to date four installations of direct distance dialing were made in several areas of the operating territory and presently approximately 24 per cent of the company's total toll traffic is handled by direct distance dialing equipment. Florida Telephone has an unusually large volume of toll traffic, a large part of which is of the short haul variety within its own operating territory. While retaining its unusually high toll revenue per station, it has been able to reduce its traffic per station costs very appreciably under dial conversions and direct distance dialing.

The direct distance dialing program in which it is presently engaged is a continuing one with additional installations planned over the next two years. Officials estimate that upon completion several years from now direct distance dialing will be handling in excess of 50 per cent of its total toll volume. The savings in traffic costs, therefore, will continue to be very substantial and traffic per station costs should continue in a downward trend. Measured in terms of profitability and return on investment in the direct distance dialing equipment, it has been the most profitable expenditure the company has made. This is basically why the company pursued its dial conversion and 2-5 numbering programs so vigorously over the last five years —so that it could take advantage of the great opportunities to reduce traffic costs which existed for it in the field of direct distance dialing.

It was also felt by management that the use of direct distance dialing by customers would stimulate more toll business and revenue, and it has had just that effect in the areas where it is presently in use. Not only has it proven to be a "cost reducer" but a "revenue builder" as well.

Florida Telephone has likewise concentrated on a sales program in the last few years. An active employee selling program was established two years ago and it has proven to be of great value as a revenue builder. In-

(*Continued on page* 36)

NORTH STATE TELEPHONE COMPANY

Supplying

High Point, Thomasville and Randleman

with

Local and Long distance Telephone Service

EMENT REQUIRED BY THE ACT OF ST 24, 1912, AS AMENDED BY THE OF MARCH 3, 1933, AND JULY 2, TITLE 39, U. S. C. SECTION 223) ING THE OWNERSHIP, MANAGE- AND CIRCULATION of Public Utili-ortnightly published fortnightly at ore, Maryland for October 1, 1959.

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e owner is: (If owned by a corporation, me and address must be stated and also diately thereunder the names and ad-s of stockholders owning or holding 1 ent or more of total amount of stock. owned by a corporation, the names ddresses of the individual owners must en. If owned by a partnership or other rporated firm, its name and address, ll as that of each individual member, be given.) Public Utilities Reports, Inc., ington, D. C.; Ernest R. Acker, Poughe, N. Y.; R. N. Benjamin, New York, : Stuart Cooper, Wilmington, Del.; nd C. Forbes, New York, N. Y.; and e S. Young, New York, N. Y.

e known bondholders, mortgagees, and securit holders owning or holding 1 ent or more of total amount of bonds, gages, or other securities are: None.

ragraphs 2 and 3 include, in cases where ockholder or security holder appears the books of the company as trustee or other fiduciary relation, the name of erson or corporation for whom such e is acting, also the statements in the aragraphs show the affiant's full knowl-and belief as to the circumstances and tions under which stockholders and se-holders who do not appear upon the of the company as trustees, hold stock ecurities in a capacity other than that ona fide owner.

PUBLIC UTILITIES REPORTS, INC.
Frederick A. Lavey, Business Manager

n to and subscribed before me this 17th f September, 1959.

Josephine A. Olker
Notary Public

commission expires August 31, 1963)

creasing emphasis is being given to selling the services the company has to offer.

Florida Telephone has been one of the most rapidly growing independent telephone companies in the country and has the reputation in investment circles as a growth company. Ranking 29th in size in the independent field of some 3,800 independent companies based upon operating revenues in 1958, its growth has been so rapid in the postwar era that it has required 26 pieces of financing (13 bond issues, 3 preferred stock issues, and 10 common stock issues) over the last thirteen years. As a result it now has approximately 2300 shareholders in 38 states. Total telephones have increased from 7,642 at the end of 1945 to approximately 45,000 as o tober 1, 1959, an increase of 4 cent. Operating revenues are n excess of $5,000,000 or approx ly $114 per telephone. A subs increase in revenues and earni being experienced in 195 u combination of greatly increase ness and reduction in per statio due to its mechanization progra

Grand River Mutual Telephone Corporation

Princeton, Missouri
C. W. CHASTAIN, *General Manager*

BEING financed by REA we have no problems of financing new construction. However, if you dance you must pay the fiddler. While our fiddler is supposedly somewhat cheaper than other fiddlers, you can still run up a pretty good bill, if you dance long enough.

During our six years of operation, in which we have increased dial telephones from none to nearly twelve thousand, costs have increased substantially. This causes a higher debt service load per telephone while revenues per telephone have not shown a corresponding increase. Each of our dial exchanges is unattended. So, although our gross toll per telephone has increased with conversions, the net toll has stayed about the same, due to loss of "B" commission.

Our rates for exchange service, based on cost estimates of five years ago (both construction and operating), undoubtedly are due for revision.

The best "added" revenue getter we have is a sales contest open to all employees. The contestant's name is placed in the wheel once for each $1.00 of added annual revenue produced by his extra efforts. Of course, order taking in the business offic not count. At a monthly dra names are picked for 3 prize a and, at the annual Christmas awards are made to the three h the highest dollar production f previous year.

The period August 21 to N ber 20, 1957, produced added a revenues of $3,558.00, Novemb 1957 to November 20, 1958, pro $10,664.00 and November 21, to July 20, 1959, $8,861.00. A for 23 months of $23,083.00 a ly with current production aver about $1,100.00 per month.

PROFILE OF A GROWING COMPANY

California Water & Telephone Company provides modern service to more than 140,000 telephones in diverse areas of Southern California. The telephone properties of this company now rank 11th among the nation's almost 4,000 Independent Telephone Companies. Our water properties, located in part of Los Angeles County, portions of San Diego County, and on the Monterey Peninsula, provide water service to an estimated population of 200,000 in these rapidly growing areas.

CALIFORNIA WATER & TELEPHONE COMPANY

California Water & Telephone Company

300 MONTGOMERY STREET • SAN FRANCISCO, CALIFORNIA

The Lincoln Telephone and Telegraph Company

Lincoln, Nebraska
MERLE M. HALE, *Vice President*

e las 32 months The Lincoln epho e and Telegraph Com- as c nverted 18 exchanges to erati n and established two new chan es. Direct distance dialing ent as been installed to serve hange s. New buildings have een constructed at six major evera smaller exchanges. A tory general office and equip- building at Lincoln is nearing tion. Equipment will provide distance dialing and 2-5 num- facilities. Microwave radio fa- have been installed to provide e service between 24 ex- s. Data processing equipment en installed in Lincoln to pro- echanized billing. Major addi- ave been made to central office ent, cable and other facilities ahead of growth requirements. he next five years, new buildings e constructed in 10 major and l smaller exchanges. Twenty- changes will be converted to dial ion and nation-wide direct dis- dialing will be made available to exchanges. Microwave facili- ill be expanded and major ad- s for growth will be required in s equipment facilites.

atomic energy power plant be- uilt near Lincoln is expected to t a movement of industry to this Several missile bases will be ructed in LT&T territory. These nstallations and the present Lin- Air Force Base will require a mount of communication facili-

viously, such continuing growth es large amounts of additional l and a satisfactory level of gs to attract it. In 1957 the company obtained about $3 million through the sale of its common stock and $5 million through the sale of first mortgage bonds. This year $3 million of convertible, preferred stock will be issued.

The gross construction program this year amounted to $6.6 million and next year's program will be comparable.

Revenues have been increased and costs reduced through a program designed for this objective.

Usage of service is stimulated through an active merchandising and advertising program. An employees' sales participation program has proven to be effective. An increase in rates authorized by the Railway Commission became effective last February.

New methods have increased efficiency. With installations of direct distance dialing, several large toll centers have been discontinued and operator service routed to Lincoln. Four district offices were discontinued with area managers reporting direct to general offices. Plant operations have been centralized in several areas with former local forces moving to area points for dispatching. Data processing equipment, mentioned before, is expected to increase efficiency. Exchange surveys and forecasts cut costs through more accurate long-range planning.

Reflecting the rate increase in part, earnings per share of common stock for 7 months ending July 31 increased from $1.90 to $2.53. Other contributing factors were favorable business conditions and the sales and efficiency programs.

The Lorain Telephone Company

Lorain, Ohio
H. E. HAGEMAN, *President*

E of the things that is impairing revenues of telephone com- s very materially is the sharp se in taxes. Taxes today are the st single item of expense. the year 1936, the taxes for our any were a little less than $30,- 0 per annum. The percentage small in relation to the gross in- of the company. r the year ending June 30, 1959, irect taxes of our company plus xcise taxes we collected from our mers reached the high sum of 5,639.92 or 32.7 per cent of the gross income we collected from our customers.

During the 23 year period from 1936 to 1959, the number of telephones in service increased a little over 4 times the number we had in 1936.

Our expenditure for net additions to property this year will be about 1½ million dollars to serve additional customers moving into our area.

The slogan of Independent Telephone Companies for many years was to give good telephone service at rea-

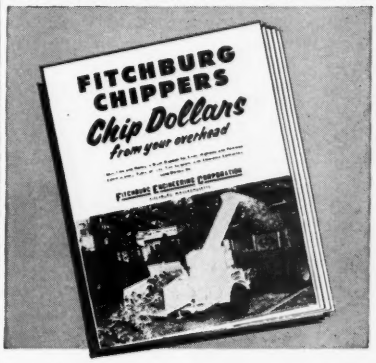
(*Continued on page* 38)

LEE
TELEPHONE
COMPANY

"Through Service We Grow"

MARTINSVILLE, VIRGINIA

HOW TO SAVE MONEY IN BRUSH DISPOSAL



Read how foresters, tree surgeons, highway and park commissions, telephone, power and gas companies cut brush disposal costs up to 50% with a Fitchburg Chipper.

See cut-away color drawings of the Fitchburg Chipper—the exclusive Fitchburg spring-activated feed plate—pictures of different models in action.

FREE — Write for your copy of "Chip Dollars from Your Overhead." Address Dept. PUF-109.

FITCHBURG ENGINEERING CORPORATION
FITCHBURG, MASSACHUSETTS

sonable rates. The time has come when it will be impossible to do that unless we can discover some means of stopping such huge cost in taxes.

Telephones are a necessity today for every kind of business and the wage earners are dependent on the telephone for their daily wage.

Something must be done to save more of the money we collect from customers to furnish a fine communication service to them.

Our rates are still reasonab may become necessary to ask f increase soon, but under prese laws it seems unfair to us that large percentage of the increas again be allocated to taxes.

North Carolina Telephone Company

Matthews, North Carolina
LINN D. GARIBALDI, *President*

THE problems both our systems encounter are no doubt the same problems other independent operating companies have, particularly those companies whose territories are experiencing growth better than the national average. These problems in the main, of course, are a continuing demand for telephone service of the best grade possible which includes construction in the areas where telephone service has never been or has been limited, upgrading of telephone service for various subscribers, the financing of construction each year, the obtaining and training of qualified personnel, as well as merchandising or sales effort to compete for a portion of the consumer's dollar. Of course, these problems have to be dealt with day by day, and we believe one of the greatest factors today will rest with the state regulatory authorities in providing sufficient rate of return on net plant to take into account the increasing costs of doing business, which involve not only the cost of money (rising interest rates) but the demand from company personnel for periodic wage increases and the rising costs of all types of material we buy.

Our systems beginning about 1950 could no longer in any way postpone the betterment of facilities for increased service, which meant getting away from antiquated offices and old plant, so that in 1948 we envisioned long range plans extending about ten years for Western Carolina Telephone Company and North Carolina Telephone Company for a full conversion to dial operation, which meant, of course, intertoll dialing with 2-5 numbering plan and getting ready for direct distance dialing. This ten or twelve year plan is drawing to a close and we have just converted the 19 exchanges in the Western Carolina Company with all it calls for, that is to say, modern exchanges and commercial buildings, building new plant and extending plant where necessary for the training of personnel to meet the new conditions. The Western Carolina Company has gone from about 3,000 stations in 1948 to currently approximately 14,500 with expenditures during this period of about $6,000,000. The North Carolina Company from 1950 to currently has gone from about 2,500 to 6,500 stations with expenditures of approximately $3,700,000. This system has 11 exchanges all of which are latest dial operation.

Our construction budget for the Western Carolina system for 1960 will call for an expenditure o proximately $700,000 of which 000 will be for increasing the c office and toll equipment and th ance for outside plant constru The North Carolina Company struction budget for 1960 whi finalized will approximate $3 and will call for about $50,0 central office and toll equipmen the balance for outside plant struction.

Our average rate of growth the past several years for both tems has been at the rate of 7 to cent station wise, so that, usi straight line projection and assu conditions would be the same fo next nine or ten years, will doub size of the systems during this p This, of course, will call for co ing construction and financing this time. One reason for heavy tinued growth has been the fact industries have been coming in territories we serve and these tional payrolls as they begin t erate create a demand for telep service. We feel we have not a reached a saturation point even the present population served, be the number of telephones we hav 100 population is below the nat average.

SERVING 8854 SQUARE MILES
in California and Nevada

8,554 square miles in the States of California and Nevada are served by 28 central offices and the extensive long distance network of California Interstate Telephone Company. Growth in mining, manufacturing, agriculture, recreation installations and military bases has accounted for the doubling in size of the company in the past five years.

North State Telephone Company

High Point, North Carolina

ROBBINS TILDEN, *Secretary-Treasurer & General Manager*

ORTH STATE TELEPHONE COMPANY, located in the rapidly ng, industrial Piedmont section rth Carolina, now serves a total ,597 telephone stations in its exchanges of High Point, asville and Randleman and in surrounding areas. It has achieved a net gain of about 1800 stations since October of last year. To accomplish this plant expansion and to provide the required additional toll lines the company is spending about $600,000.

All of North State's telephones, including those in the rural sections of its territory are all dial operated. North State Telephone Company was the first company in North Carolina to install dial service and to dial numbers in distant exchanges over its toll lines.

The Peoples Telephone Corporation

Butler, Pennsylvania

S. E. PHILLIPS, *Vice President & General Manager*

HE PEOPLES TELEPHONE CORPORATION, Butler, Pennsylvania, of January 1, 1959, a capitalizaf $6,913,239 and total telephone of $8,831,455, operating 20 exes, serving 32,000 stations in 7 ies, 30 miles north of Pitts's vast industrial center.

e in 1958 we took a look at our ion and found a growing demand rvice that was out of all proporo our capacity.

tside plant facilities were not ent, and central office equipment ar below service requirements. quate inter-exchange circuit s were responsible for inferior e, and costing us unknown loss ll revenue. Several tributary ngs were too small for the cenffice additions to meet anticipated e requirements.

r main exchange at Butler serves 50 per cent of our total cus-s, and includes 75 per cent of eferred regrades. So we decided uld "do the most good for the people" by concentrating our 1959 effort there.

r first approach was to establish commercial estimates for cable ire additions as well as the cenffice to put the outside plant to Construction schedules for the letion of several major cable jobs coördinated with the installation addition of 2400 lines of termer station equipment to be in-d in the Butler central office. We lso considering 2-5 numbering utler and five nearby tributaries anuary 1961.

o microwave installations, one ntly under construction, the planned for 1960, will provide inter-exchange facilities be- the Butler Toll Center and two s of tributary offices. Other exchange groups will be ex-d by either carrier or combinaocal and toll cable.

Two enlarged tributary office buildings, and a building at each of the microwave tower sites, are under construction.

A new garage and storeroom on a four acre tract of land on the outskirts of Butler will provide a new headquarters from which the Plant Department will operate in 1960.

When plant moves to the new building, a general reshuffling of departments in our main building will provide space for automatic punch card billing equipment and expanded toll terminal facilities. Long range plans dedicate some of this space to automatic toll ticketing.

We prepared a program and budget for 1959, and preliminary estimates for 1960. The 1959 budget contemplates gross additions of $1,806,000, which is over 20 per cent of our telephone plant in service. Our current view is that gross additions for 1960 will at least equal the amount budgeted for 1959.

In February 1959 we converted $1,500,000 in bank loans to 4½ per cent bonds to mature in 1983. We plan an issue of over $1,000,000 in common stock on the basis of one share for

(*Continued on Page* 40)

This advertisement is neither an offer to sell nor a solicitation of offers to buy any of these securities. The offering is made only by the Prospectus.

NEW ISSUE

September 29, 1959

271,553 Shares

Boston Edison Company

Common Stock

(Par value $25 per share)

Holders of the Company's outstanding Common Stock are being offered the right to subscribe at $56.75 per share for the above shares at the rate of one share for each ten shares of Common Stock held of record on September 25, 1959, with privilege of oversubscription, subject to allotment. Subscription Warrants will expire at 3:30 P.M., Eastern Daylight Saving Time, on October 13, 1959.

The several Underwriters have agreed, subject to certain conditions, to purchase any unsubscribed shares and, both during and following the subscription period, may offer shares of Common Stock as set forth in the Prospectus.

Copies of the Prospectus may be obtained from any of the several underwriters, including the undersigned, only in States in which such underwriters are qualified to act as dealers in securities and in which the Prospectus may legally be distributed.

The First Boston Corporation

Blyth & Co., Inc. Kidder, Peabody & Co. Stone & Webster Securities Corporation

White, Weld & Co. Hornblower & Weeks Lee Higginson Corporation

F. S. Moseley & Co. Paine, Webber, Jackson & Curtis

each two shares currently held, our final objective being a ratio of 50 per cent equity to debt.

Since many of the dollars we are spending are for service improvements, it is obvious that current rate schedules will not support an investment of this magnitude at today's costs; therefore a general rate revision in the near future is inevitable.

We have a sales organization in the early stages of training which will grow as the facilities to expa come available, when we will b ing door bells, as well as tele bells, to offer our current and ne tomers the ultimate in telephon ice when and where they want i

Rochester Telephone Corporation

Rochester, New York

F. M. CLARK, *Vice President—Customer Relations*

AT this point in 1959, it is clear that the increase in business and residence customers will be extremely modest when contrasted with the gains in recent previous years. This situation is due in part to the decline in the level of general business activity which began in mid 1958 and from which recovery is not yet complete, and, more importantly, to the slowdown in family formations which is not expected to make noticeable improvement before the middle '60's.

Based on this assumption, we are preoccupied with reinforcing outside plant so that we will be in a position to cope with the increased demand for main station services that, we believe, will hit us starting in the next two or three years. Specifically, commercial and plant engineering personnel are working together closely to relieve congested areas and to provide adequate plant margins in feeder routes. We regard this activity as long range merchandising to put goods on the shelf in anticipation of future demand.

To maintain revenues in the present climate we are concentrating in three broad fronts. On the one hand, we are attempting to increase efficiency in both construction and installation activities, and to control inventories more effectively. On the other hand, we are attempting to sell harder to existing customers on both custom company initiated contacts. La not least, we are working on bo toll promotion and toll settleme pects of our revenue picture.

In this framework, 1959 pr to be an excellent year. This is part to a general rate increase 1958, coupled with our hard activities, and improved inventor expense control. We plan to co our program in 1960 with speci phasis on more advertising and selling of better grades of serv residence customers, of more venience systems in homes and nesses, of more productive publi phone, and more toll business.

WESTERN CAROLINA TELEPHONE COMPANY is one of the larger regional operating telephone companies in North Carolina, operating 19 exchanges with approximately 15.000 stations. The company serves all or a portion of 11 counties in western and southwestern North Carolina which are: McDowell, Yancy, Mitchell, Madison, Buncombe, Jackson, Swain, Graham, Cherokee, Clay and Macon, North Carolina and Rabun County, Georgia.

NORTH CAROLINA TELEPHONE COMPANY operates 11 exchanges in the south central portion of North Carolina, having in service approximately 7,000 stations, and serves all or a portion of Eastern Mecklenburg County, Union County, Anson County, and Stanley County.

The territories of both companies are in a growth period due to the diversified type of industry and agriculture in their respective areas. Inquiries are invited from institutions and industries interested in plant sites in this section of the South, as well as individuals interested in relocating on account of retirement.

WESTERN CAROLINA TELEPHONE COMPANY
NORTH CAROLINA TELEPHONE COMPANY

Inquiries should be addressed to the President's Office, Box 38, Matthews, North Carolina.

Southeastern Telephone Company

Tallahassee, Florida
E. M. MENENDEZ, *Division Manager*

HE ste ped-up requirements for expan on of service into rural and he demands for a higher ntage of individual line service se of greater usage have resulted ant in estments greater than the iated income will support. On her hand, industry developments as carrier equipment and micro- systems require less investment ovide a given quantity of circuits was previously required.

t revenues increase when oper- costs decrease. Automation has d keep operating costs down in ace of rapidly increasing labor At the same time, increased of government and the resulting ase in taxes, together with legislation such as the minimum wage laws have had the opposite effect.

The problem of maintaining a balance between plant requirements and revenue requirements is ever with us. Sooner or later the problem's solution may mean increased rates but this must be postponed as long as the balance can be obtained otherwise.

Southeastern Telephone Company's local service is now 100 per cent dial. Toll circuit additions have and will employ the use of microwave. Operator toll dialing is in effect and "direct distance dialing" is on the horizon. All of these programs are designed to provide more revenue.

Recently, mobile telephone service was inaugurated in the Tallahassee, Florida exchange. Having overcome the initial "acceptance" phase, it will now be a revenue producer. Our ratio of residence extensions to main stations and the use of telephones in color should and will be increased through our merchandising efforts. Good revenue producers such as Key systems and PABX service are filling a real need for business use. We anticipate considerable expansion in the use of private line service and channels. We have completed plans to install equipment which will make automatic line insulation tests and other equipment which will put cables under pressure. This will not only reduce maintenance costs but will improve public relations as well.

The Southwestern States Telephone Company

Brownwood, Texas
D. T. STRICKLAND, *Vice President & General Manager*

ppears 1959 will be another rec- rd year for The Southwestern s Telephone Company.

e company expects its largest n gain of any year in history, about 11,000 stations added to etwork. The company presently s about 140,000 stations in s, Oklahoma, Arkansas and siana.

the company continues to grow stations are added, it becomes more important that a vigorous am of revenue requirements be ed. Our policy is to carefully scrutinize the earnings of each exchange and of our operations in each state. When earnings slip, we take immediate action to take up the slack in earnings and improve them through rate adjustment. However, to keep the basic rates as low as possible, we have underway an active merchandising program as well as a program to increase rates for miscellaneous charges.

In trying to render its service obligations profitably, the company has realized more and more the importance of a good employee training program, since such a program is necessary to equip each employee with the knowledge and ability to perform his job in an efficient and productive manner.

Craft employees first get thorough departmental on-the-job training, then more advance training on a group basis. As an example, an advance plant school for central office dial equipment maintenance is conducted in Brownwood on a continuing basis.

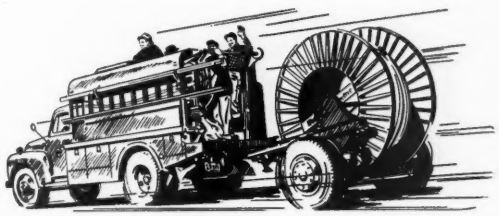
Management training includes annual company informational meetings

(*Continued on Page* 42)

MOVING AHEAD! . . .

With* and *for
Eastern North Carolina

In '58 Carolina Telephone spent more than $12 million in operating expenses, and almost $10 million more on expansion, adding more phones than ever to keep up with our busy area's growth



Carolina
TELEPHONE AND TELEGRAPH COMPANY

for all supervisory employees. Key management people are sent to summer university executive development programs.

A management development program is conducted regularly while periodic departmental training meetings are held.

With a sound employee tra program, tomorrow's leaders ar ing developed from those empl who work for the company toda

Sunland-Tujunga Telephone Company

Sunland, California

ALLAN R. STACEY, *Vice President & Manager*

CONSIDERING the problem of more effective programs for taking care of revenue requirements, I should like to report upon one such program by the Sunland Company. In our special message for this issue last year, mention was made that Sunland Company was just beginning a program of house-to-house solicitation in order to sell telephone service. Certain results of this program now be of interest.

A sales crew was developed posed of basic units of three m aged sales women working a six day for four days a week. ladies walked from door-to-do the residential area of the exc calling upon existing telephone and residences without tele service.

The cost to the company was per hour of solicitation. These part-time people and there we fringe benefit costs to be paid it is anticipated that it would less than one year to canvas exchange.

In a three-month period the fo ing results were obtained:

Items Sold	
Color Telephones	
Extension Telephones	
Primary Service Installations (non-users at time of contact)	
Upgrades	
Total First Month's Rental	$
Total Service Connection Charges	$4
Total Sales Hours	1
Revenue Sold Per Hour	$
Wage and Expense Cost Per Hour	$
Recurring Annual Rental Revenue	$7

Judging by the first three mo results, a door-to-door canvass of type can be effective in selling tional extension telephones in premises of present users and in ing primary service to persons now using our telephones. The land Company plans to continue a program.

This is not an offer of these securities for sale. The offer is made only by the Prospectus.

NEW ISSUE

UNITED UTILITIES SYSTEM

229,606 Shares

United Utilities, Incorporated

Common Stock

(Par Value $10 Per Share)

The Company has issued Warrants, expiring at 4:00 P.M., Central Daylight Time on October 13, 1959, to holders of its Common Stock, evidencing rights to subscribe for these shares at the rate of 1 share for each 10 shares held of record at the close of business September 29, 1959.

Subscription Price $29.50 per Share

The several Underwriters have agreed, subject to certain conditions, to purchase any unsubscribed shares and, during and after the subscription period, may offer shares of Common Stock as set forth in the Prospectus.

Copies of the Prospectus may be obtained in any State in which this announcement is circulated from only such of the underwriters, including the undersigned, as may lawfully offer these securities in such State.

Kidder, Peabody & Co.

Hornblower & Weeks **Dean Witter & Co.** **W. C. Langley & Co.**

Bache & Co. **McDonald & Company** **The Ohio Company**

September 30, 1959.

VALENTINE CLARK CORPORATION

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WESTERN RED CEDAR

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DOUGLAS FIR—WESTERN HEML

TREATED BY THE THERMAL PROC

United Utilities, Incorporated

Kansas City, Missouri
C. A. SCUPIN, *President*

o keep pace with construction nd modernization programs that he largest in the history of the d System, it has become neces- to focus increasing attention on ue requirements. The 1959 con- tion budget contemplates gross rty additions of $23.1 million. nt schedules and results verify onstruction at this annual rate is maintained. Provisional 1960 ates indicate that gross property ions approximating $25 million e required.

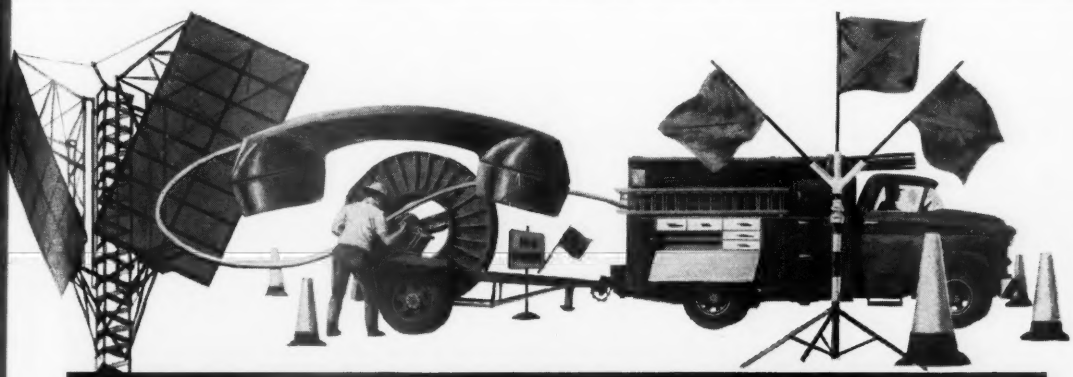
ide from the capital require- s that associate with the accom- tion of some 22,000 stations to lded in 1959 by reason of in- l growth, System schedules an- te the conversion of 103,400 ns to dial operation. With th trends expected to rise and conversion and improvement rams expected to stabilize, it is in that substantial construction ets will be required for the years diately ahead.

Approximately $10.5 million or 45 per cent of the 1959 gross construction requirement will be derived from internal sources. The remaining 55 per cent will consist of the proceeds derived from equity offerings of the parent company and first mortgage bond sales by subsidiaries. In an attempt to hold new money requirements at or near the present dollar level, System companies have instituted procedures, some formal—some informal, for balancing revenue requirements with plant requirements. The parent company is lending assistance to this effort by establishing earning level criteria and rate policies, directing toll compensation studies, reviewing directory advertising and sales revenues, and developing more comprehensive merchandising programs.

The first step taken to insure adequate gross revenues involved a thorough study of all rate structures. With plant investments per station having increased over 40 per cent in the last five years and with the continuing rise in construction costs, it is necessary that revenue requirements following major construction commitments be anticipated sufficiently in advance to maintain a uniformly compensatory rate structure. Several companies have secured regulatory approval of optional dial rates that become effective at the outset of dial operation in a given exchange area. Other companies have found it necessary to reprice general exchange service in order to obtain sufficient revenues. Still others have reviewed service connection charges, special service tariff filings and rate groupings in an effort to make all classes of service self sufficient. More significantly, procedures have been developed whereby perpetual rate review is now a standardized operation.

The System has found some excellent opportunities for meeting revenue requirements via the field of auxiliary and special services. Vari-

(*Continued on Page* 44)



A YEAR OF EXPANSION AND PROGRESS

Steady population growth within the territories we serve was responsible for an increase of 5,500 in the number of telephones in service during the first half of 1959. The Southwestern States Telephone Company provides modern efficient service to nearly 138,000 telephones in certain areas of Texas, Oklahoma, Arkansas and Louisiana. Of the total telephones in service, 86 per cent are dial operated.

THE SOUTHWESTERN STATES TELEPHONE COMPANY
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ous merchandising and promotional campaigns are being used throughout the System to stimulate sales of extensions, colored instruments, convenience systems, private automatic branch exchange service, paging, loudspeaking and conference services and any other service that the customer wants sufficiently that he is willing to pay a compensatory rate. While the exploration of this area has merely been started, the additional revenue that is being obtained and the income margin that is being displayed by auxiliary and special service facilities is very encouraging.

These several specific programs, together with other general operations, have served to provide significant increases in gross operating revenues and net income for the first months of 1959 as compared with corresponding period of 1958. revenues for the semester were from $18,411,787 in 1958 to $20,631, in 1959, or 12 per cent. solidated net income available common dividends and surplus creased by 28.5 per cent, $1,752,637 to $2,251,610.

West Coast Telephone Company

Everett, Washington

L. GRAY BECK, *Vice President & General Manager*

Revenue Requirements

IN recent years, there has been considerable emphasis and propaganda about the "forward look." Certainly if there ever were an area in operations that requires the "forward look," the matter of revenue requirements is that area. The need for additional revenue obviously comes about by the product of our current inflationary and growth times wherein our expenses increase faster than our revenues and depress our rate of return.

In our aim toward keeping expenses as low as possible, consistent with reasonable service to our customers, it is necessary to examine the two critical "producers" of expenses—these are (1) employees, and (2) capital investment.

With regard to employees, it is not only the continued increasing cost of salaries and wages, but the added costs of vehicles, office space, administration, taxes and fringe benefits that require steps to insure maximum production per man hour. To maintain the top value of each employee, we must be sure of proper selection, training and supervision. As a part of the selection process, the modern methods must be used matter how good the individual cannot be expected to do a prope without adequate training. Dev ment of a capable management imbued with the objectives o company, is bound to improve duction.

The second critical "produce expense is capital investment wi requirement for depreciation, t maintenance and financing costs important planning element her lates to the availability of the p plant at the proper place at the p time, with recognition given t future needs in the area under sideration.

In the pricing of our service look to the relative value of the ous services we offer and also t cost of providing such service these postwar years we have obse an accelerated demand for indiv line residence service. This ind a greater value to the custome such service, and as a consequen have increased the spread of our between four-party and one- services. Also, we have increase spread between business and resi services. As is the case in other nesses, we attempt to get a maxi return on the luxury or de luxe i

Good "forward look" planning quires a look into the third, fo and fifth years ahead, but an abs must is the "twelve-months a plan." The three main elements revenues, construction and expe With these elements carefully mated on a monthly basis and fu developed into a twelve-months analysis, you are then in a pos to estimate in advance your for any additional revenue req ments—particularly if you hav ready been analyzing your cu trends on a twelve-months basis.

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Winter Park Telephone Company

Winter Park, Florida
J. K. GALLOWAY, *President*

a growth situation such as we are experiencing here in Central Florida, we are confronted with three major problems: (1) adequate earnings, (2) training people to do the job required and (3) planning facilities. Adequate earnings are being achieved through high exchange rates, by moving income from toll charges and carefully controlling expenses. Also we have made our common stock, preferred stock and bonds attractive to investors and maintained adequate bank credit. Such are essential to meet service requirements make it necessary to double our plant investment every five years.

Training people is not an easily solved problem. We try to instill in our people a desire for greater knowledge and then extend to them every practical means to acquire that knowledge and thereby learn how to do a better job. On company time alone we have utilized an average of 48 hours per employee in organized training in the past twelve months, with several times that average used by each employee on his own time.

We have determined, as accurately as possible, the areas where facilities will be needed and have provided those facilities as fast as income from that investment will pay the carrying charges. Of necessity, a calculated lag in income exists in the installation of certain central office facilities and main feeder cables, but the maintenance of a high line fill and high cable usage tends to offset such exceptions.

As our population doubles every five years each of these major problems, earnings, training and facility planning, assumes greater importance in the success of our operation.

New Building Planned for Bell Telephone Lab. at Holmdel, N. J.

GROUND was broken recently for a new Bell Telephone Laboratories building, which will provide more work space through the use of functional architecture and new design features. The new center will provide additional space for development of new and improved communication facilities.

Construction of the laboratory is expected to cost about $20,000,000. Initial occupancy for about 1,500 employees will start late in 1961. The plan provides for ultimate expansion to about 4,500 persons.

(*Continued on Page* 46)

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October 1, 1959

Pushbutton Phone May Replace Rotary Dial

A PUSHBUTTON telephone device that may eventually replace the rotary dial as the link between people and the telephone switching machine is being developed at Bell Telephone Laboratories.

Pushbutton calling has been made feasible by modern electronic advances, such as the transistor, applied in an extensive development program. Engineers have designed complex equipment to adapt central office switching to pushbutton signals. At the same time, the appearance and operation of the pushbutton telephone have, in so far as possible, been tailored to suit people's preferences and capabilities, as revealed in laboratory tests.

To place a call on a pushbutton phone, the user simply presses buttons instead of turning a fingerwheel. As each button is pressed, two simultaneous musical tones are generated and transmitted to the central office. The tones, which can be heard on the receiver, are similar to those now heard in some localities when long-distance calls are made.

This is, in effect, a new language, different from the language the dial uses in directing calls through the switching system to their destinations.

The present switching system—which, nationwide, comprises the world's largest computer—does not yet understand this new language. An array of mechanical-electronic equipment, appropriately called a "translator," has been developed for the purpose of adapting existing central offices.

Simultaneously, research has undertaken to discover which k pushbutton set people would most and could use most rapidl accurately.

The selected arrangement o buttons—one for each digit—co of three horizontal rows of three plus the zero or "operater" but the bottom.

A pushbutton mechanism has efficiently designed to fit into the shell that now houses the sta instrument, simply replacing th tary dial.

According to the announce the average time for tapping seven-digit number is about fiv onds. Rotary dialing, by contrast, an average of nine seconds.

The time taken for a pushb call to go through after the nu has been signaled would depen the type of switching system us the locality. Where crossbar sw ing has been installed the time w be proportionately reduced. W step-by-step switching systems ate, the number would be stored mentarily in memory unit in the tral office and the call woul through at slightly better than n dialing speed.

Information on the potential eral acceptance of a pushbutton phone is being measured in cu customer tests with pushbutton temporarily placed in the offices homes of 200 persons in Ham Conn., and 200 more in Eligin Translating equipment has been stalled in the central telephone o of the two cities.

Utility "Labels" Late Payme To Maintain Customer Goo

Earning customer goodwill is a portant matter for utilities and firms dealing with the public. O times, they go beyond the call of to maintatin this intangible asset.

A case in point is the method us the Chesapeake and Potomac phone Company to placate late-pa customers who might otherwise plain that they had "already paid bill."

Frequently, when a client pays bill at the last minute via a ban store, the phone company does no ceive the payment until the day new bill is to be mailed. Usual is too late to rerun the statement. Chesapeake and Potomac circum probable complaints by applyi

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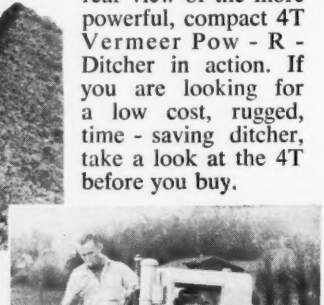

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pressure sensitive credit label
bill.
veloped for the utility by the
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rnia, the label lists the telephone
er and amount of payment. By
of gentle reminder, it notes that
yment was received after the bill
een prepared, and asks that the
nt be deducted from the total.

lephone Terminal to Outer pace Under Construction By Bell Lab

experimental ground station for
ng and receiving telephone mes-
by way of man-made satellites
ing shape on a hilltop in Holm-
New Jersey.
e station, under construction by
Telephone Laboratories on
ford Hill, could point the way
network of terminals for sending
e calls and live television to dis-
parts of the world. These stations
d "bounce" radio signals off
ns of "sky-mirror" satellites.
e station will include control
ings and two large antennas for
unication experiments with ob-
in outer space. One of the uses
e installation will be to take part
mmunication projects sponsored
he National Aeronautics and
e Administration.
e of the projects at Holmdel will
he quality of radio signals trans-
d between stations on opposite
of the United States by means
flections from a satellite.
though single telephone channels
be used in the experiment, the
tive is to determine whether
ision's "broadband signals" (the
alent of about 900 telephone
nels) could also be transmitted.
ch broadband signals cannot now
arried over present submarine
s, and cannot be transmitted di-
y by radio between widely sepa-
l points because the signals are
ed by the earth's curvature.
e microwave radio signals to be
in the experiment will be ana-
l to obtain information about
smission effects. The data also
be studied to discover the reflec-
characteristics of satellites in

e satellite experiments probably
be preceded by test transmissions
gnals using the moon as the re-
or. The signals will be received
transmitted between NASA's Jet
ulsion Laboratory tracking sta-
at Goldstone, California, and Bell
oratories, some 2300 miles apart.

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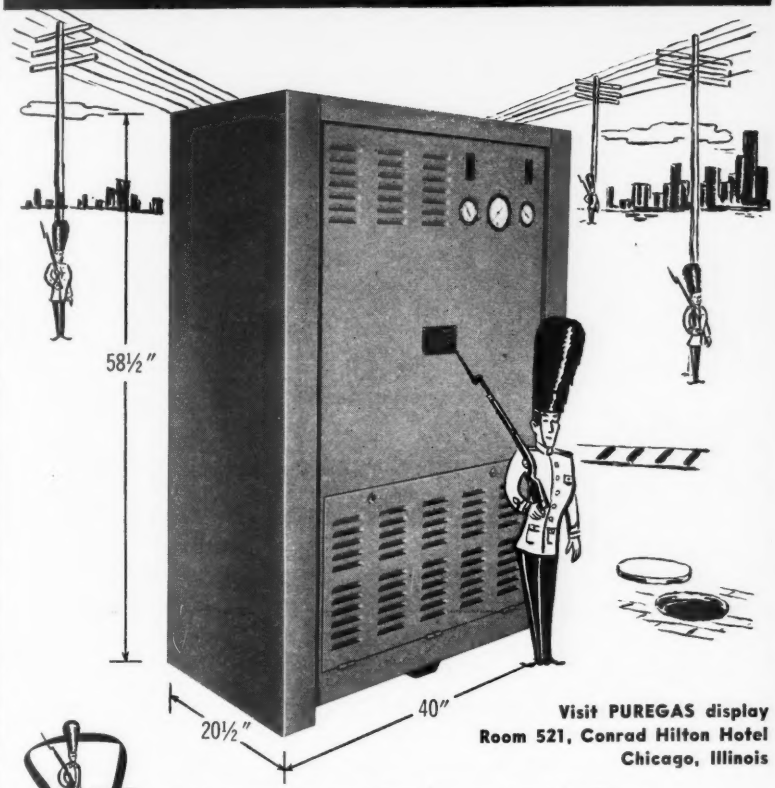

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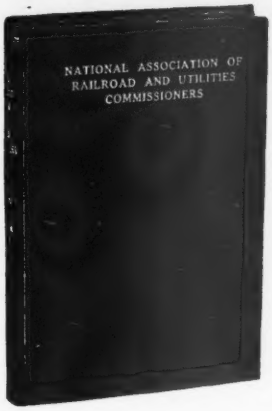

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General Electric's
J. W. Seaman, Gene
Power Transformer Department,
answers some questions on . . .

• New concepts in the power transformer business
• Benefits for utilities

Q. ***Mr. Seaman, what is General Electric doing to make progress in power transformers pay off for utilities?***

A. Quite a bit. Right now we are announcing an important extension of our Preferred Design transformer line that will bring many outstanding benefits to electric utilities.

Q. ***What are the major features of this new G-E PD Transformer Program?***

A. Actually, they begin with a new way of doing business . . . and a new approach to developing and producing power transformers. Let me explain. For some years now, our greatest challenge has been to find a solution to the seemingly always-rising labor and material costs. A partial solution to this problem was effected in 1957 when Preferred Design transformers were introduced. Using a 705 computer, we made an embryo attempt to introduce product uniformities into units rated up to 50 mva and 138 kv. With this start, techniques of more mechanization, sub-assembly work, and repetitive operations were utilized.

Now, we go a step further. Inflationary trends, still with us, dictated the need for further efforts—a new business approach.

Q. ***How would you explain General Electric's new business approach on power transformers?***

A. Simply this. General Electric has extensive engineering and manufacturing skill. However, because of the tradition of making custom-built or individually tailored transformers, our major advances have largely been limited to engineering accomplishments. Our new goal was to develop a concept whereby our latent manufacturing abilities could be applied to power transformers.

To do this, we have extended our Preferred Design program to include units rated as high as 250,000 kva and 230 kv. We have developed three styles of transformers for the three major application areas, i.e., large substation, transmission-tie and generator step-up units.

The uniform mechanical features and accessories for each type are truly utility-preferred because of our extensive product planning efforts to determine what the *industry* wanted. With these uniformities in our products, we are able for the first time to apply G.E.'s full manufacturing knowledge to power transformers. And, because of our computer, we are still able to offer complete electrical design flexibility to best meet specific requirements within each application area.

Q. ***How about those utility benefits?***

A. G-E power transformer users will benefit because our new concept has to, and does 1) combat the inflationary trend and protect or improve purchasing power, 2) reflect customer-preferred features and practices, and 3) simplify our product.

Q. ***Can you give some examples of that "product simplification"?***

A. Obviously, the uniform mechanical features and accessories are one example. Another is that for years we built different tanks, depending upon cooling method required. We have now relegated cooling to its proper place as an accessory where it does not interfere with our basic attempt to get optimum transformation. Cooling packages are now always placed at the end of the new tank which is suitable for all types of coolers. It isn't until the cooling equipment is to be attached that our assembly people must know which cooling method is specified.

The advantages of building essentially one type of tank are, I believe, readily apparent.

Q. ***What are the "pay-offs"?***

A. In the short range, operat ng peo will see many new and b ter ite in power transformers, su h as e in uprating, better cool s, eas installation, 40 percent fa ter del eries, and others. Utility e gineeri people will be aided be ause PD program permits val able d on large units to be pub ished estimating and planning purpo And, we can also supply, with propositions, drawings that are proved for construction purpose final planning or substation desi can begin immediately after an or is placed for a G-E unit.

Purchasing people will, I am s appreciate the addition of ma features which formerly had to specified. Now standard, these s dollars and some detailing work. Al our progress to date in the areas described permits us to realign published prices which, averag the few increases with the many creases, will mean an over 5% do ward adjustment for the entire l To utility management people p ticularly, we further state that t program should permit us to ma effective manufacturing economi If the utility industry then provi volume support and if inflation co tinues at the current rate, net p lished prices which haven't been creased since mid-1957 should rem near their present levels for at le the next several years.

Q. ***This sounds like every utility m connected with the purchase of power transformers could pro ably explore these advant ges. H about further information?***

A. Our General Electric S les E neers have full informat on. Th or the local G-E Appar tus S Offices, should be contact d.

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